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dissertation entitled

Strategy and human resources management:
A management control perspective

presented by

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has been accepted towards fulfillment
of the requirements for

Ph.D. degree in Management

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Date August 4, 1989

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STRATEGY AND HUMAN RESOURCES MANAGEMENT: A MANAGEMENT CONTROL PERSPECTIVE

By

Scott Anthony Snell

DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Management

1989

ABSTRACT

STRATEGY AND HUMAN RESOURCES MANAGEMENT:
A MANAGEMENT CONTROL PERSPECTIVE

By

Scott Anthony Snell

This research examined the relationship between the strategic posture of firms and the human resource management (HRM) practices they employ. Strategic posture is viewed along a single dimensions from domain defense to domain offense. HRM is portrayed in this study as a management control system composed of two major types: (1) behavior, and (2) output.

Behavior control is characterized by performance standards that are set autocratically and remain fixed over time, loose performance-reward linkages, behavioral performance measures, close supervisor surveillance, evaluation based upon improvement over time, and frequent feedback. Output control, on the other hand, involves consultative and flexible performance standards, tight performance-reward linkages, results performance measures, evaluations based upon comparison to preset targets, and infrequent feedback.

It was hypothesized that the demands of strategic posture create information processing difficulties for executives and, therefore, serve as sources of administrative uncertainty. In particular, domain offense was viewed as limiting the ability of executives to observe and predict the cause-effect in the subordinates' performance.

Since, under conditions of administrative uncertainty, executives were viewed as less able to prescribe and monitor employee behavior, it

was hypothesized that they would rely less on behavior control and more on output control systems to regulate performance.

Results based on data obtained from presidents and vice presidents from 89 companies provides no support for the notion that strategic posture is a source of administrative uncertainty experienced by executives. In addition, administrative uncertainty was related to neither behavior control nor output control. Finally, results indicated that strategic posture was related to neither type of HRM control. Consequently, there is absolutely no evidence to support a mediation hypothesis (via administrative uncertainty).

Implications of these findings are discussed with regard to research limitations and avenues for future research. Overall, it is concluded that a great deal more work is needed to understand the nature of HRM as a control system in organizations.

Some lessons are forever; never need to change.
Write and the word is written, and you turn the page.

But some lessons take forever, time and time again.
Caught in a battle that you can't surrender, and can never win.

Loggins

ACKNOWLEDGEMENTS

While it is perhaps true that a dissertation is a solitary endeavor, I hasten to note that I had an enormous amount of help--some of it coming long before I even knew the meaning of the word "dissertation." To all my teachers, formal and otherwise, I am happily indebted.

First, the members of my committee deserve aknowledgment: Ken Wexley, John Wagner, John Hollenbeck, and Jim Skivington. Through it all, these professors held steadfast to their principles; a quality I have come to respect greatly. As my Dad so wisely mused, "Some days you swear by them, some days you swear at them" And now, in retrospect, I thank each of them.

Not surprising, my family is central in my life. I wish to thank my Mom and Dad for teaching me about values, direction and love. Above all else, I hope they are proud of me. Thanks also to my oldest brother, Tim, for being my first and best intellectual hero. Thanks to my sister, Jan, for teaching me that we can go home again. Thanks to my brother Jamie for (over the years) teaching me about brotherhood in the truest sense.

Here's to good friends, the ones that teach you who you are, and who you can become. Thanks to Dave Rom for teaching me how to keep life's challenges in perspective. Thanks to Don Bittner for teaching me that the last 10 percent is as worthy as the first 90. Thanks to Dana Gray for teaching me about harmony. And thanks to Tim Baldwin for teaching me, in general, more than I taught him. You win Doc.

A few other teachers kept springing back to mind during this dissertation process. Thanks to Miss Good for teaching me that formal learning can be fun. Thanks to Mr. Burns for teaching me about leadership. Thanks to Mrs. Straub for teaching me about perserverance. Thanks to Mrs. Bangert for teaching me to think in the future perfect tense. And thanks to Mr. Clark, Mr. Atkinson, and Scott Chrislip for first teaching me how to jump hurdles. I am still not very good at it--but I keep trying.

Finally, special thanks to my wife, Marybeth, who literally "stumbled" into this whole thing after it had begun. Ironically she was the one who taught me how to keep by balance. I have grown to love her for that, and for a catalog of other reasons.

S.A.S. 11/4/88
Boalsburg, PA

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1

INTRODUCTION

In recent years, researchers have become interested in how organizational phenomena influence the characteristics of human resources management (HRM) practices. Zedeck and Cascio (1984, p.463), for example, have argued that since "HRM issues are part of an open system," research may be "nonpragmatic and theoretically bankrupt" unless examined within the broader context of firms. Despite a great deal of progress in specific areas of research such as staffing, training, performance appraisal, rewards, etc., very little is known about how these various HRM practices work in collaboration, or how they fit into the larger scheme of organizational functioning (Baird and Meshoulam, 1988).

Given a call for expanding the focus of HRM, a few researchers have begun to explore the potential influence of organizational strategy on the characteristics of HRM practices (e.g., Galbraith and Kazanjian, 1986; Miles and Snow, 1984; Schuler and Jackson, 1987; Tichy, Fombrun and Devanna, 1982). The concept of strategy is used to describe the variety of ways firms position themselves vis a vis their environments (Hofer and Schendel, 1978) and provides an overall indication of the context and pattern of activities within the firm (Miller, 1986). In fact, many researchers, such as Ansoff (1965), argue that strategy actually defines the organization. Due to the pervasive impact of strategy on organizational activities, there is a rising consensus that a firm's strategy may be the ultimate determinant of HRM practices (Schuler and Jackson, 1987). Different firms with different strategies may utilize different HRM systems.

CHAPTER 1

INTRODUCTION

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1.1 The Confluence of Strategy and HRM

Despite growing interest in the strategy-HRM interface, very little empirical research has been conducted (Dyer, 1984). There are a few exceptions, and they are reviewed below. These studies are noteworthy in that they begin to show a trend of strategy-HRM patterns across firms. However, the data pertaining to HRM practices is fairly sketchy (sometimes anecdotal), and theoretical explanations for the observed findings have not been completely developed.

Research by Miles and Snow (1978). As part of a broader study, Miles and Snow (1978) found a relationship between the strategic posture of firms and associated characteristics of their HRM practices. At one extreme, "Defenders" (firms that enacted narrow and stable domains) utilized HRM practices that emphasized error prevention. Performance goals were set top-down (i.e., centralized) and focused on holding and maintaining current levels of achievement. Since the success of Defenders depended on protecting their current position, executives in these firms did not want their subordinates trying new ideas or taking risks. Performance appraisals were designed to ensure consistent and stable behavior, and evaluations about performance were based upon whether a person improved over time. Feedback to subordinates was given frequently in order to detect and correct errors as quickly as possible.

These HRM characteristics contrast sharply to practices utilized by "Prospectors" (firms that enacted broad and dynamic domains). These firms tended to have a more decentralized HRM orientation. Superiors tended to set performance standards more consultatively with subordinates in order to take advantage of their local knowledge.

Subordinates were also accorded more discretion in their activities in order for them to identify and act on opportunities as they occurred. Performance evaluations, in these cases, focused on results rather than programmed behavior, and rewards were closely tied to results achieved. A summary of the differences between Prospectors and Defenders is presented in Figure 1.

A third set of firms, referred to as "Analyzers," are a hybrid of Defenders and Prospectors (Hambrick,1980; 1981; Snow and Hambrick, 1980; Snow and Hrebiniak, 1980). These firms utilized HRM practices that blended aspects of both Defenders and Prospectors.

Miles and Snow (1978) provided two related explanations for these findings. First, they noted that HRM was part of the administrative network in firms and was, therefore, designed to reduce uncertainty in the technical core (Thompson, 1967) to an acceptable level given the firm's strategy. Since Defenders needed certainty and Prospectors adapted to uncertainty, administrative systems (e.g., HRM) varied according to the demands of strategy. In a later study, Miles and Snow (1983) argued that HRM activities were designed to elicit and reinforce certain types of behaviors. Defenders emphasized efficient behavior while Prospectors focused on creative and innovative behavior. HRM practices differed in order to ensure the behavior required by the strategy of the firm.

Research by Lorsch and Allen (1973). In a study of how firms manage strategic diversity and interdependence, Lorsch and Allen (1973) described two basic administrative styles. First, organizations

	DEFENDER	PROSPECTOR
DOMAIN	narrow	broad
	stable	changing
GROWTH	restrained	aggressive
	current markets	create new markets
DISTINCTIVE COMPETENCE	price-cost	exploit opportunity
	efficiency	flexibility
CONTROL SYSTEM	early error detection	results oriented
	efficiency	goal effectiveness
	standardized activities	discretion
	corrective response known	not known
	short feedback loops	short feedback loop
	historical improvement	compare to referent

Figure 1:

Findings from Miles and Snow (1978)

following a strategy of unrelated (conglomerate) diversification tended to use performance evaluations based upon explicit predetermined goals and end results criteria. Executive appraisals were made using quantitative indicators of divisional performance. In addition, rewards were tied directly to divisional performance outcomes (frequently based upon an objective formula).

Second, a strategy of vertical integration was associated with performance appraisal/reward systems that were more informal. Specifically, Lorsch and Allen (1973) reported that evaluations were subjective and included attention to intermediate measures such as operational procedures and behavior. In addition, there was no systematic connection between individual performance and rewards (e.g., no use of incentives, bonuses, etc.). Instead, rewards were based upon subjective judgments about the effectiveness of the entire firm.

Two subsequent studies by Murthy and Salter (1975), and Pitts (1974) partially support these findings. These researchers similarly found that greater product-market diversity was positively related to performance evaluation and rewards being closely tied to divisional results. These findings are summarized in Figure 2. Lorsch and Allen (1973) explained their findings using the logic of contingency theory (Lawrence and Lorsch, 1967). According to the researchers, integrated firms operate in less complex and uncertain environments. In these cases, more personal behavioral methods could be used to manage human resources. However, in the case of unrelated conglomerate diversification, environments were far too complex and varied to permit a centralized and personal form of management. Results criteria were

	RELATED/INTEGRATED	UNRELATED/CONGLOMERATE
PERF STANDARDS	less formal	formal, explicit
PERF CRITERIA	intermediate	results
EVALUATION	subjective overall org. perf.	objective divisional perf
REWARDS	no link to perf.	strong linked to perf.

Figure 2

Findings from Lorsch and Allen (1974)

substituted as a means of evaluating executive performance since it was impossible to monitor their actual behavior. In addition, since member actions could not be closely monitored, rewards were made contingent on verifiable outcomes.

Research by Kerr (1985). In an attempt to expand on the Lorsch and Allen (1973) study, Kerr (1985) found that diversity per se did not account for evaluation/rewards system differences across firms. However, when the data were re-analyzed according to the degree of stability versus change in a firm's strategic posture, very clear evaluation/reward system differences emerged.

On the one hand, Kerr (1985) identified a "steady-state" strategy (firms that vested major commitments in current businesses). Similar to the Miles and Snow (1978) "Defenders," these firms depended upon their ability to compete successfully within a stable domain. Also consistent with Miles and Snow (1978), Kerr found that evaluation/reward systems in these firms represented management's concern for maintaining procedural continuity and efficient operations. Performance feedback was provided frequently to subordinates and tended to be of a subjective and developmental nature. In addition, the linkage between performance and rewards was weak or non-existent. However, when discretionary rewards were given to managers, they were based on total corporate performance and seniority.

The other strategy identified by Kerr (1985) was called "evolutionary" (firms pursuing rapid growth and change through acquisition and divestment). Like Miles and Snow's "Prospectors," these firms needed adaptive capability in situations of sudden opportunity or

threat. Representative of this type of firm's concern with flexibility, members were accorded more procedural discretion, but evaluations and rewards were tied directly to results indices. These findings are shown in Figure 3.

Beyond an ad hoc explanation, Kerr (1985) did not lay out a strong theoretical rationale for why differences in reward systems might exist across firms. Instead, he encouraged future research to more rigorously pursue tests of hypotheses generated from the study.

Research by Schuler and Jackson (1987). In a very recent study, Schuler and Jackson (1987) investigated the degree that an entrepreneurial focus in firms is related to the array of HRM practices employed by executives. These researchers theorized that an entrepreneurial orientation requires creative and innovative behavior from its members. In order to elicit and reinforce this type of behavior from their subordinates, it was hypothesized that executives would utilize a more participative human resource system (see Figure 4). Schuler and Jackson (1987) characterized such an HRM system as including broad career paths, ambiguous job definitions, results oriented appraisals (reflecting group performance), employee stock ownership, flexible pay packages (preserving internal and external equity), and a future oriented training and development focus.

The results of the Schuler and Jackson (1987) study largely confirm their hypotheses. Executives in entrepreneurial firms did tend to utilize a more participative HRM system. However, it might be noted that while the construct of "required behaviors" was hypothesized to mediate the strategy-HRM relationship, no empirical test of this

	STEADY STATE	EVOLUTIONARY
PERFORMANCE STANDARDS	informal implicit	formal explicit
PERFORMANCE CRITERIA	qualitative	quantitative
APPRAISAL PROCESS	subjective frequent feedback	objective infrequent feedback
PERFORMANCE-REWARD LINK	weak	strong

Figure 3:

Findings from Kerr (1985)

	ENTREPRENEURIAL FIRMS
APPRAISAL	
- need for coordination	+
- based on results	ns
- reflect group effort	ns
- long range focus	ns
REWARDS	
- based upon market	+
- comparison to referent other	+
- stock ownership	+
- flexible reward packages	+
- use of incentives	ns
- pay above market	ns
- pay below market	+
DEVELOPMENT	
- emphasis on training	+
- chance to gain new skills	ns

Figure 4:

Findings from Schuler and Jackson (1987)

proposition was conducted in the study. This leaves the theory explaining Schuler and Jackson's findings open to question.

1.2 Summary and Directions for Future Research

Each of the studies described above provides evidence that strategy and HRM are related in some manner or another. Yet none of the researchers have provided a particularly complete rationale for why they found the results they did, nor have they paid much attention to measurement precision (tests for internal consistency reliability). On the one hand, these limitations might be due to the fact that the findings were drawn from larger studies focused on strategic management in general rather than HRM in particular (the Kerr and Schuler studies are exceptions). Since the studies did not address HRM as a primary area of interest, this may account for the paucity of theoretical and empirical rigor. On the other hand, if previous studies only attended to HRM issues in passing, the findings may be spurious or artifactual. Regardless, the pattern in the data across studies is suggestive of the fact that the strategy-HRM relationship is worthy of further pursuit.

While previous studies provide a foundation for future theory and research, these efforts could be improved upon in at least two ways. First, a more logical focus could be achieved by developing a model explaining how and why strategic posture is related to HRM practices. This would not only require a discussion of how strategy influences the context of activities within the firm but also how HRM plays an overall role in managing those activities. Second, research could be improved by designing a method that examines HRM practices in detail. Since most

previous research provides only a general depiction of HRM, more precise examination of specific HRM practices might reveal exactly where the impact of strategy occurs. For example, does strategy influence all or only certain facets of HRM?

Each of these issues is addressed in detail in the following chapters. Chapter 2 presents a model of HRM in the context of firms. Briefly, this model is used to propose that strategic posture determines the level of administrative uncertainty executives experience. In turn, HRM is viewed as a control system that allows executives to cope with uncertainty and yet administer the human resources in the firm. Three major hypotheses are derived from this model. Chapter 3 outlines the method used to test the research hypotheses. Chapter 4 reports the results of this research, and Chapter 5 discusses the implications and limitations of these results.

CHAPTER 2

THEORETICAL MODEL

The relatively slow advent of integrative research in the strategy-HRM area is arguably due to the absence of an appropriate theoretical paradigm. Strategy research, in general, focuses on the activities of firms in the context of different competitive environments (Hofer and Schendel, 1978). HRM research, on the other hand, typically focuses on the behavior of individuals in the context of their jobs (Mahoney and Deckop, 1986). These two streams of research traditionally have separate agendas-- with different objectives and assumptions. Although the two disciplines are not incompatible, there is at this point no well accepted model that brings strategy and HRM research together. "For the most part, we are entering uncharted waters" (de Bejar and Milkovich, 1986, p.2).

Perhaps the first step toward integrative research in the strategy-HRM area is the articulation of theory explaining how strategy might influence the nature of managerial work. Human resources management, above all else, involves the administration of internal operations. It seems plausible that if strategy influences the context of internal operations it may, consequently, influence the nature of HRM.

2.1 The Concepts of Strategic Posture and Administrative Uncertainty

To examine this notion further, it is first necessary to define the concepts of strategic posture and administrative uncertainty. Following this, a model of the relationship between strategy and administrative uncertainty is described. Ultimately it is argued that strategic

posture indirectly determines HRM practices through the mediating influence of administrative uncertainty.

The concept of strategic posture. Strategy is often defined as a pattern in a stream of decisions (Mintzberg, 1978). In particular, strategic decisions concern commitments to action regarding a firm's present and future domains (Miles and Snow, 1978; p. 7). For example, firms enter and exit different businesses, serve different customers and market segments, and offer different mixes of products and services. The "common thread" that binds these activities together and defines a firm's business is referred to as strategy (Ansoff, 1965).

Since strategy, as this pattern in decisions, is extremely complex (Hambrick, 1980; Miller, 1986), researchers have tried to synthesize the array of activities firms undertake into a more interpretable framework (e.g., Egelhoff, 1982; Galbraith and Schendel, 1983; Miller and Friesen, 1977). The framework that is of particular interest in the present study was adapted from Miles (1982). This framework attempts to capture the essence of strategic posture by distinguishing the pattern of activities across firms.

(1) Domain defense. A strategy of domain defense can be characterized in terms of the narrowness and stability of a firm's posture vis a vis the environment. Firms following this strategy attempt to preserve the legitimacy of their current business within a traditional product-market arena (Miles, 1982). These firms tend to ignore environmental change and focus on maintaining continuity through efficient operations. Operationally, firms following a domain defense strategy can be viewed as offering a narrow mix of products and services

to a concentrated set of customers-- all of which tend to remain stable over time (Miles, 1982).

(2) Domain offense. In direct contrast, a strategy of domain offense can be characterized in terms of product-market differentiation and change. Firms adopting this strategic posture attempt to adapt rapidly to environmental disturbances by investing capital in product innovation and market segmentation (Miles, 1982). Operationally, firms following a domain offensive strategy can be viewed as offering a varied (and varying) product mix to a diffused customer base.

(3) Domain creation. Miles (1982) described domain creation as a strategy of unrelated diversification outside the firm's present business arena. This strategy represents a firm's rapid departure from its traditional domain of competition in order to find an independent means of growth and profitability. As will be discussed below, this strategic posture is not of direct interest in the present study.

Each of the first two strategic postures described above (i.e., domain defense, domain offense) can be analyzed in reference to the degree of domain diversity and change established firms. Diversity and change serve as the common denominators that distinguish one strategic posture from another. The theoretical model developed for this study makes explicit use of these characteristics in proposing a linkage between strategic posture and HRM.

<u>The concept of administrative uncertainty</u>. The second concept used in this study is referred to as administrative uncertainty. March and Simon (1958, p. 145) defined administrative uncertainty as "the ease of observingjob activities, the ease of observing job output, and the ease

of relating activities to output." Thompson (1967, p. 86) later used the phrase "incomplete cause-effect (i.e., means-ends) knowledge" to describe one specific type of administrative uncertainty. Borrowing from these researchers, administrative uncertainty is defined in the present study as a superior's lack of knowledge (i.e., understanding) of the linkage between subordinate actions and the outcomes they achieve.

Under the most certain administrative conditions, executives can determine a direct correspondence between the actions subordinates take and the outcomes they achieve. This cause-effect or means-ends knowledge facilitates a superior's ability to direct and supervise subordinate performance (Ouchi, 1978). On the other hand, in the most uncertain administrative conditions, executives cannot determine what subordinates must do (or have done) to achieve their results. In these cases where cause-effect knowledge is incomplete, a superior's ability to administer human resources is hindered.

In the paragraphs below it is argued that the firm's strategic posture is a potential source of administrative uncertainty. Administrative uncertainty, in turn, is viewed as a determinant of the HRM practices utilized.

2.2 Strategic Posture as a Determinant of Administrative Uncertainty

Researchers have argued that different strategies place different administrative demands on executives (e.g., Bourgeois and Astley, 1979). Ingeneral, these demands can be discussed in terms of the information processing requirements executives encounter as a function of their .pa

firm's chosen strategic domain (Egelhoff, 1982; Hrebiniak and Joyce, 1984; White, 1986).

Recall that a domain offensive strategy is characterized by firms establishing complicated and changing points of contact with the outside environment (e.g., product diversity, unstable customer base). Executives in these firms face higher information processing requirements in order to monitor external disturbances and respond to competitive events (Miles, 1982). Berg (1969) and Egelhoff (1982) found that under circumstances where executives must attend to a great number and variety of stimuli (i.e., higher information processing demands), their focus on internal affairs was diminished. In addition, Chandler (1962) found that product-market diversity could result in problems of erratic communication, incomplete information flows, and ambiguous lines of responsibility. Miles and Snow (1978; p. 22) referred to this set of dilemmas as the "administrative problem" in strategic management; coping with uncertainty inside the organizational system.

In contrast to domain offense, a strategy of domain defense is characterized by firms maintaining relatively few points of contact with the outside environment (e.g., narrow product line, stable customer base). In fact, executives in these firms tend to purposely ignore outside events and instead focus attention on internal affairs in order to maintain continuity and efficiency (Miles, 1982). In these cases, the information processing requirements of executives are not as extensive or novel as in the case of domain offense. Therefore, the level of administrative uncertainty experienced by executives is likely to be less. Based upon the findings from previous studies it can be

argued that the information processing demands of strategy constitute a direct source of administrative uncertainty for executives. This uncertainty is defined in terms of executives' ability to plan, appraise and control the activities of organization members-- in short, to administer the human resources of the firm (Chandler, 1962; Jones, 1984).

Consolidating these findings, it is reasoned that since information processing demands differ across firms in accordance with strategic posture, the degree of administrative uncertainty among executives will also vary accordingly. Consequently, it is hypothesized that executives in firms following a strategy of domain offense (i.e., diversity and change) experience more administrative uncertainty than executives in firms following a strategy of domain defense (i.e., narrow and stable domain).

Hypothesis 1: The degree to which a firm establishes a strategy of domain offense (versus defense) is positively related to the degree of administrative uncertainty experienced by its executives.

2.3 A Theory of Human Resource Management Control

Perhaps the greatest obstacle to conducting research on the strategy-HRM interface is depicting the overall role of HRM in organizations. According to Mahoney and Deckop (1986), since HRM evolved from a rather disjointed collection of employment practices (e.g., staffing, appraisal, training, rewards), it is difficult to conceive of HRM as a unified theoretical construct. However, an over-arching theory of HRM would serve at least two purposes. First, theory

would indicate which HRM practices are conceptually related, and therefore, might tend to coincide in firms. For example, certain HRM techniques may serve similar purposes, involve similar processes, or result from similar influences. This kind of information would indicate which HRM practices may be used in conjunction with one another, and why.

Second, theory would help explain why HRM is related to strategic posture; that is, the causal connections that bring HRM into the strategic context of firms. Baird and Meshoulam (1988) have referred to these two respective issues as internal fit and external fit.

In this study HRM is conceived as serving a control function in firms. Control, in general, is defined as:

> [A]ny process in which a person or group of persons or organization of persons determines, that is, intentionally affects, the behavior of another person, group, or organization (Tannenbaum, 1968, p.5).

Hofstede (1980; p. 14) pointed out that "[s]ocial systems can only exist because human behavior is not random, but to some extent predictable." Without some means for circumscribing some idiosyncratic behavior, chaos results. In effect, the organization dis-integrates. It is in this sense that control is described as the inevitable correlate of organization; organized behavior is controlled behavior (Clegg and Dunkerly, 1980; Tannenbaum, 1968). In fact, the whole notion of control lies at the root of several theories of organization (Clegg and Dunkerly, 1980; Katz and Kahn, 1978; March and Simon, 1958; Tannenbaum, 1968; Weick, 1978). If an organization is viewed as a patterned arrangement of interlocked behaviors (Allport, 1955; Barnard,

1938; Weick, 1979), then control is the process that partially determines the form of this arrangement and helps to preserve its existence over time. This argument is elaborated below.

Individuals bring different talents and interests to the organization. Through collective action they can achieve for themselves (and for each other) what they could not otherwise achieve acting alone. However, individuals may knowingly or unknowingly act in ways that are beneficial to them personally, but detrimental to the collective whole (March and Simon, 1958; Tannenbaum, 1968; Williamson, 1975). Preserving the integration of these potentially diffuse behaviors is largely a function of control. Tannenbaum's (1968) cycle of control is depicted in Figure 5. The control process begins with the intentions of person A, followed by his/her influence attempt addressed to person B. Person B then acts in some way to fulfill the intentions of person A. In complex organizations, many such control cycles interact simultaneously.

The organizational mechanisms that manifest control in firms are referred to as control "systems" (e.g., Daft and Macintosh, 1985). With regard to HRM, executives utilize various HRM practices to ensure that subordinates act in a manner they deem appropriate (i.e., behaviors to fulfill their intentions). Consequently, these activities can be studied as a control system.

2.4 Two Types of HRM Control Systems

From the perspective of control systems, it is not the individual HRM practices in isolation that are of interest researchers, but how the entire set of HRM practices are used in concert to regulate employee

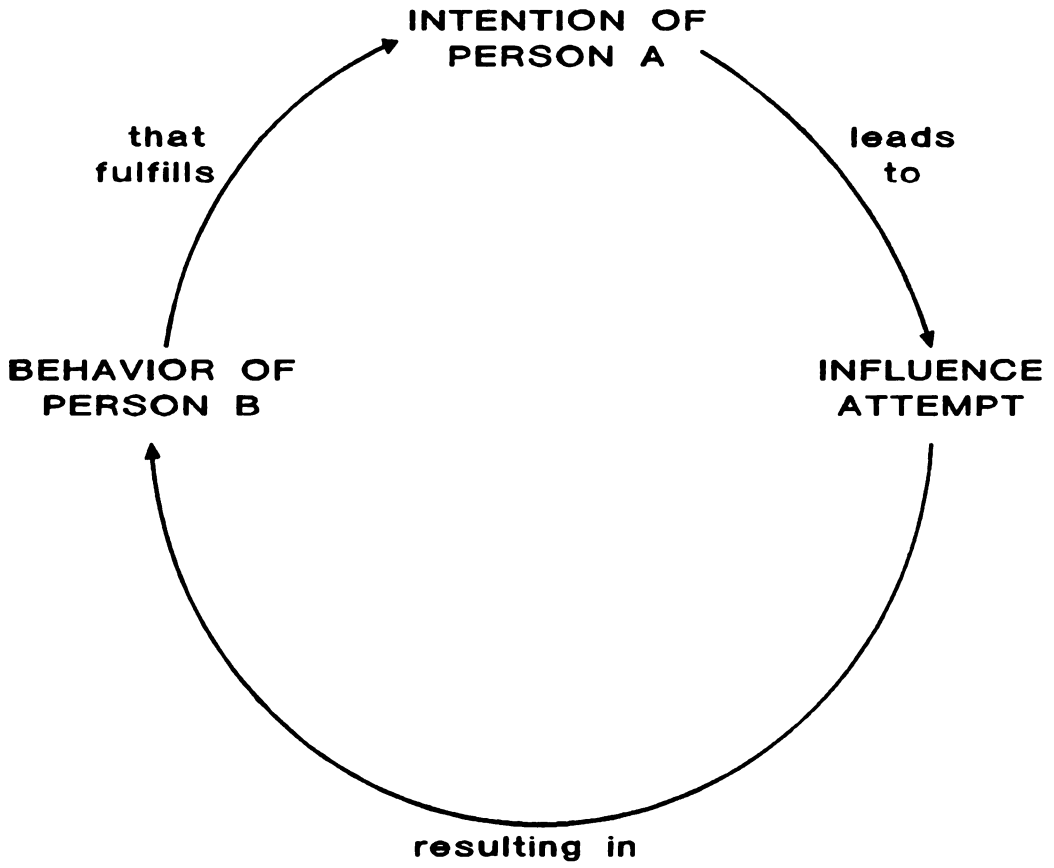


Figure 5

The Control Cycle

performance. With this in mind, previous research has revealed two consistent patterns in the characteristics of HRM systems (e.g., Kerr, 1985; Michael, 1974; Miles and Snow; 1978; 1984; Ouchi, 1978). By combining the findings across individual studies, it is possible to describe two comprehensive types of HRM control systems. These two systems are referred to as (1) behavior control, and (2) output control. The characteristics of these two systems are summarized in Figure 6 and described below.

Behavior control systems. Behavior control systems are comprised of HRM practices designed to standardize the explicit actions of subordinates on the job (e.g., Michael, 1974). In this system, superiors initiate a centralized control process by autocratically imposing programmed behavioral routines (Michael, 1974; Ouchi, 1978; Ouchi and Maguire, 1975; Turcotte, 1974). These behavioral programs delineate exactly what subordinates must do to fulfill their superiors' intentions.

Superiors attempt to ensure that these performance expectations are met through their own personal surveillance of subordinate activities. Monetary rewards are dispersed equally among organizational members regardless of their individual performance and have almost no controlling influence apart from attracting and retaining organization members (Katz, 1964; Kerr, 1985). In order to determine whether subordinates have acted in a manner prescribed by management, supervisors monitor the behaviors subordinates exhibit on the job. This evaluation process may be the most fundamental element of behavior control (Ouchi, 1977). Behavior observation provides direct, first hand information to

	BEHAVIOR CONTROL	OUTPUT CONTROL
ARTICULATING INTENTIONS	centralized, standardized programmed routines	consultative, flexible performance standards
INFLUENCE ATTEMPT	hierarchical authority	contingent rewards
SUBORDINATE COMPLIANCE	behaviors personal surveillance frequent feedback	results comparison to targets comparison to referent

Figure 6:

Characteristics of Behavior and Output Control Systems

superiors, and provides a clear and instantaneous indication of what subordinates actually do on the job (Latham and Wexley, 1981). By analyzing and interpreting performance data themselves, supervisors are not dependent on the information processing efforts of others (e.g., collection, storage, retrieval of performance data). However, since behavioral measures require the personal surveillance of supervisors, they are time consuming (Heneman and Wexley, 1983) and susceptible to personal bias (Wexley and Nemeroff, 1974).

Superiors examine this performance information and make inferences about the adequacy of subordinate contributions. Generally, appraisal decisions involve the superior's judgement of the appropriateness of subordinate behavior (Thompson, 1967). Developmental feedback is provided frequently (Kerr, 1985) in an attempt to correct performance deviations as promptly as possible (March and Simon, 1958). In this case priority is placed upon the personal development of subordinates and improvement over time (Kerr, 1985).

In summary, the components of behavior control operate as an integrated system to minimize uncertainty of subordinate behavior. In general, superiors accomplished this by centralizing decision-making and standardizing prescribed behavior on the job.

Output control systems. Output control systems, on the other hand, are characterized as less centralized and less standardizing than behavior control. Under this type of HRM system, superiors tend to stipulate fewer rules, allow subordinates more discretion and input in decision-making, and place more emphasis on the results achieved rather behaviors exhibited (Michael, 1974; Ouchi, 1977).

Superiors' intentions are conveyed not through performance programs but through performance standards or targets (e.g., goals, quotas). Performance standards help translate the intentions of superiors into operational imperatives for subordinates and focus their efforts toward superordinate outcomes (Latham and Wexley, 1981). Typically, these standards are set through consultation between superiors and subordinates rather than being imposed top-down (Hrebiniak, 1978; Michael, 1973). In addition, standards are typically left tentative and flexible, allowing for periodic adjustment (Argote, 1982; Cheng and McKinley, 1983; Kerr, 1985; Lorsch and Allen, 1973; Schoonhoven, 1981; Van de Ven, Delbecq and Koenig, 1976).

The second component of output control is the design of subordinate reward scheme. Rather than closely supervising subordinate behavior, monetary rewards are made contingent on the achievements of employees--usually some type of formula-based incentives (Lorsch and Allen, 1973; Kerr, 1985). These incentives serve as an extrinsic inducement in the employment contract (March and Simon, 1958). In this regard, they are often used as a surrogate for personal and hierarchical influence. A recent meta-analysis of different formal reward systems indicates that they can have a profound effect on employee productivity (Guzzo, Jette, and Katzell, 1985). As mentioned previously, output control systems utilize performance measures that focus on results achieved by subordinates rather than behaviors exhibited (Ouchi, 1977; Ouchi and Maguire, 1975). This information is ultimately used to develop an assessment of subordinate contribution. That is, results measures provide a raw index of whether subordinates have behaved in accordance

with management's wishes (Barnard, 1938; March and Simon, 1958). While results measures have the potential benefit of tying employee performance directly to "bottom line" outcomes of the firm (Drucker, 1973), researchers have sometimes cautioned that results measures may be undesirable as a control criterion (e.g., Brogden and Taylor, 1950). Blum and Naylor (1968), for example, noted the potential problems of criterion contamination and criterion deficiency in results measures. Peters and O'Connor (1980) pointed out that since there is not a direct correspondence between the actions people undertake and the outcomes they achieve, results measures give at best only an indirect indication of individual performance.

In addition, since results information requires a lag time for collection, summarization, and interpretation, corrective action may be less immediate and relevant if circumstances change before corrections are implemented (Latham and Wexley, 1981). Consequently, performance feedback is provided less frequently to subordinates.

Performance standards provide the principle bench-marks against which actual performance is evaluated (Carroll and Schneier, 1982; Latham and Wexley, 1981; Thompson, 1967). In the case of output control, measured performance can be compared to performance targets set a priori (Flamholtz, 1979; 1986). In addition, superiors also evaluate subordinates relatively, by comparing their performance to some referent other such as a colleague or a competitor (Thompson, 1967).

In summary, output control systems accord subordinate more decision-making input and procedural latitude but hold them accountable for the results they achieve.

2.5 Behavior Control Systems Versus Output Control Systems

Although Section 2.4 summarizes findings from previous studies and reveals which HRM control practices tend to coincide, it does not explain why supervisors rely on one form of control versus another. Research suggests that, other things being equal, superiors tend to utilize behavior control systems more frequently than output control systems (e.g., Michael, 1974, Ouchi, 1977; Ouchi and Maguire, 1975). One possible explanation for this occurrence ties back to Tannenbaum's (1968) definition of control as an influence process. Behavior control systems directly reduce the level of uncertainty superiors experience regarding subordinate behavior (by definition). Output control systems, on the other hand, indirectly reduce uncertainty regarding subordinate behaviors. These points are elaborated upon in the paragraphs below.

Behavior systems accord superiors complete command over each phase of the control process (Ouchi, 1977; Turcotte, 1974). Referring to Figures 5 and 6, this includes: (1) the derivation and articulation of intentions, (2) the influence attempt, and (3) the evaluation of subordinate compliance behavior to fulfill the superior's intentions. By personally managing each phase of the control process, superiors can exert more direct influence over subordinates performance. If superiors relinquish command over these phases, they may run the risk of limiting the control they can exert over subordinate behavior (Tannenbaum, 1968).

Phase one: Articulating intentions. As pointed out previously, the first phase in the HRM control process is the articulation of superiors' intentions. With a behavior control system, superiors retain authority over this decision-making process. In particular, they alone determine

and articulate their own intentions. With an output control system, standards are set more consultatively, allow-ing subordinates input. Relinquishing decision-making authority has been described as potentially detrimental to the legitimacy of a superior's control (Etzioni, 1959; Tannenbaum, 1968).

Phase two: Influence attempt. The second phase in the control process is the attempt to influence the behavior of subordinates; in effect, to align subordinate intentions with those of the superior. With a behavior control system, the influence attempt is initiated and reinforced through direct personal interaction. The superior's legitimate power over the employment contract (i.e., hiring, firing, career progress) is a primary inducement for subordinates to comply with their demands (Weick, 1979).

In addition, through personal surveillance superiors can accumulate a great deal of detailed information about the technical and logistical aspects of a subordinate's job. Such information helps to reduce the degree of uncertainty superiors experience regarding subordinate performance.

In contrast, with an output control system superiors must devise a surrogate inducement mechanism. This most generally includes contingent monetary rewards to ensure subordinate compliance. As stated previously, incentives may lose their salience, instrumentality, or value to subordinates over time (Lawler, 1981; 1985). In addition, it is extremely difficult to adjust and fine tune a formal reward system to the specific circumstances of each individual.

Phase three: Ensuring subordinate compliance. The final phase of the control process is evaluating whether subordinates have acted in accordance with the superior's intentions. Utilizing a behavior control system, superiors specify exactly what contributions from a subordinate constitute fulfillment of their intentions. This procedure reduces the possibility for misinterpretation. At the extreme, subordinates merely follow directions unquestioningly. In contrast, with an output control system superiors have no direct means of circumscribing their subordinates' behavior. Instead, subordinates are given the discretion to determine for themselves what actions fulfill their superior's demands. Such discretion may result in subordinates misconstruing the superior's intentions (Drucker, 1973) which poses a potential threat to control.

In addition, behavior control systems incorporate a relatively simple appraisal process. Because desired behaviors are prescribed a priori, superiors simply observe whether these activities have been carried out as directed. This process provides much more certainty about subordinate performance activities. Again, reducing uncertainty is ideally the function of control (Hofstede, 1980). In contrast, the evaluation process using output control systems is more complicated. Superiors must infer the contribution of subordinates from the results they achieve. In this case, evaluation is removed at least one step from measurement.

2.6 Administrative Uncertainty and HRM Control

While behavior systems ensure direct control, it must be noted that they also impose a fairly stringent set of administrative requirements on superiors. In particular, for a behavior control system to work effectively, superiors must have power over each subordinate, they must be knowledgeable about each of their jobs, and they must be able to observe each of their subordinates' activities. In fact, taken to its logical extreme superiors must be omnipotent, omniscient, and omnipresent. When these conditions are not met due to some external .pa demands or constraints, behavior controls may not be useful (Thompson, 1967).

Research suggests that the degree of administrative uncertainty superiors encounter is likely to constrain the types of control systems they utilize (e.g., Ouchi and Maguire, 1975). Recall that administrative uncertainty is generally described as the inability to observe or predict what subordinates do on the job to achieve their results. Without the capacity to understand what subordinates do on the job (i.e., incomplete cause-effect knowledge), it is unlikely that superiors could personally establish performance programs for subordinates or regulate the behavior they exhibit on the job. In general this implies that the effect of administrative uncertainty is to limit a superior's ability to centralize and standardize the control process (e.g., autocratic decision-making, behavioral surveillance). Consequently, the viability of behavior control is called into question.

In contrast to behavior control, output control systems demand less knowledge about what subordinates do to achieve superior objectives

(intentions). Instead, control derives from providing subordinates with the incentive to act on their own in fulfilling superiors intentions. Therefore, it is proposed that administrative uncertainty is a detrimental to the use of behavior control, but is conducive to the use of output control.

Hypothesis 2: Administrative uncertainty is negatively related to the use of behavior control systems and positively related to the use of output control systems.

More specific arguments are provided below regarding the individual components of the HRM control system.

Superior intentions: Programs versus standards. According to Hrebiniak (1978), and Michael (1973), when managers have complete knowledge of the work to be performed, performance programs can be set directively and autocratically. Superiors, in these cases, can translate their own personal intentions into operational imperatives for subordinates thereby providing direct control over subordinate performance behavior (i.e., behavior control).

However, if superiors lack complete information about the work situations of their subordinates (i.e., administrative uncertainty), they are likely to be less capable of translating their intentions into performance programs for subordinates. Galbraith (1973), for example, found that the basic effect of uncertainty is to limit a superior's ability to preplan or make decisions in advance. In these instances, superiors are likely to allow subordinates more input in the decision-making process (Hrebiniak, 1978; Michael, 1973). Since subordinates

have "local knowledge" about particular situations confronting them (Vancil, 1979), their input can alleviate information gaps and reduce uncertainty. Uncertainty reduction, as stated previously, is fundamental to control.

Influence attempt: Hierarchical authority versus contingent rewards. As stated previously, reward systems are used to induce desired subordinate behavior. When superiors have complete knowledge about the content and context of their subordinate's job, they can exert personal influence over subordinate performance (Katz, 1964). In these cases, extrinsic inducements (i.e., contingent rewards) need not play a vital role in the control process (Hrebiniak, 1978; Katz, 1964; Kerr, 1985; Michael, 1973).

However, if a superior lacks complete information about the work situations confronting their subordinates (i.e., administrative uncertainty), their capacity to directly control performance is reduced. Katz (1964) pointed out that when managers cannot elicit desired behavior through their own personal influence, they tend to substitute contingent rewards as an inducement for performance. This practice helps provide an incentive for subordinates to strive toward instrumental outcomes even when their specific actions are not under the superior's control.

Assessing compliance: Behaviors versus results. When superiors have complete knowledge of their subordinate's jobs, they can accumulate a great deal of pertinent (sometimes subtle) information about a subordinate's performance behavior. Consequently, performance measurement and appraisal simply involves personal observation and

evaluation of prescribed behavior over time (Thompson, 1967). This measure provides the most direct form of performance control (see Section 2.5). In addition, feedback to subordinates is available frequently (referring back to Section 2.4, behavioral observation provides an immediate and direct source of performance feedback).

However, Ouchi (1978), and Ouchi and Maguire (1975) found evidence in their sample of managers in 78 retail stores that when cause-effect knowledge is incomplete, superiors are less able to control performance through surveillance and personal evaluation. Turcotte (1974) also provided anecdotal support for this proposition in his case study of two state liquor agencies. Thompson (1967; p.85) pointed out that while some causes and consequences of behavior may be observed, others are merely suspected, and still others go completely unnoticed (Thompson, 1967, p. 85). Attempts to measure behavior under these circumstances may be futile. Consequently, under conditions of administrative uncertainty superiors must find a surrogate index of performance that signals fulfillment of their intentions. Research suggests that the next best index (albeit less proximate) might be a measure of the effects of subordinate actions in lieu of behaviors per se (Ouchi and Maguire, 1975). This procedure gives subordinates discretion over the behaviors they exhibit on the job, but holds them accountable for the results they achieve (Michael, 1974). For this reason, it is expected that evaluation of results relative to preset standards (targets) provides an indirect index of subordinate contribution.

2.7 Strategic Posture, Administrative Uncertainty and HRM Control

Recall that it was argued in Section 2.2 that strategic posture was a source of administrative uncertainty. Following this, it was also argued that administrative uncertainty is a fundamental determinant of behavior versus output control (refer to Sections 2.4 - 2.6). Combining these arguments, it can be inferred that if strategic posture influences the degree of administrative uncertainty executives experience, it may have an indirect effect on the type of HRM control those executives utilize. This notion is depicted in Figure 7 and discussed below.

Recall from Section 2.2 that when firms establish a posture of domain offense (i.e., diversity and change) executives are less likely to be capable of processing all the information required to personally influence and monitor subordinate performance. Consequently, executives experience administrative uncertainty. Recall also from Section 2.6 that when cause-effect knowledge is incomplete (i.e., administrative uncertainty), executives are likely to shift from using behavior control systems to output control systems. In these situations, the HRM control system allows subordinates procedural discretion, but holds them accountable for the results they achieve. Combining these two arguments leads to the following hypothesis:

Hypothesis 3: Domain offense is negatively related to behavior control systems and positively related to output control systems (mediated by administrative uncertainty).

Figure 7

Strategy, Uncertainty and HRM

This general hypothesis can be extended to more specific discussion regarding the separate elements of the HRM control system.

Superior intentions. Executives in firms following a strategy of domain defense (narrow, stable) can adequately process information required to personally program subordinate activities. Consequently standardized performance programs can be set top-down (i.e., autocratically) by executives. However, when firms establish a posture of domain offense (diversity, change), the information processing demands of strategy are likely to overextend the cognitive limits of superiors. In order to cope with the administrative uncertainty, executives are likely to consult with subordinates in setting flexible performance standards (Argote, 1982; Cheng and McKinley, 1983; Schoonhoven, 1981; Van de Ven, Delbecq and Koenig, 1976). These changes represent a shift from behavior control to output control.

Influence attempt. If subordinates' activities can be observed and personally controlled, as is the case in firms with a strategy of domain defense, executives are likely to induce subordinate contributions through personal surveillance and hierarchical influence. However, in cases where managers cannot adequately monitor subordinate behavior (administrative uncertainty), such as in firms with a strategy of domain offense, executives may sacrifice the ability to personally influence subordinate efforts. Instead they are likely to tie incentives/rewards to objective accomplishments, and let this linkage serve as a substitute for personal inducements. It was pointed out in Chapter 1 that Kerr (1985), Lorsch and Allen (1973), Pitts (1974) and Murthy and Salter (1975) all found evidence that partially supports this argument of a

switch from behavior to output control. However, their research did not explicitly posit administrative uncertainty as the mediating variable.

Subordinate compliance behavior. When firms establish a posture of domain defense (narrow, stable), executives are likely to be more capable of personally understanding and monitoring subordinate behavior (thereby learning about the subtle nuances in their performance). Under these circumstances, executives can measure and appraise subordinate performance through personal observation and evaluation (Ouchi and Maguire, 1975). However, when firms establish a posture of domain offense, executive surveillance may be spread more thinly (Egelhoff, 1982). In response to the administrative uncertainty the experience, executives are likely to rely less on behavioral performance appraisals (Ouchi, 1977).

In order to limit the scope of information they must process, executives are likely to appraise subordinates in terms of their results vis a vis planned targets (e.g., performance standards such as 10 percent increased sales). This substitute for behavior control allows superiors to evaluate quantifiable outcomes even when it is impossible to program what subordinates actually do on the job (Ouchi and Maguire, 1975; Ouchi, 1977).

2.8 Summary of the Theoretical Model

The model proposed for this study makes explicit some of the theoretical issues suggested in previous research. In particular, this study conceives of HRM as a control system in organizations and highlights the importance of administrative uncertainty as a mediator in

the strategy-HRM control linkage. It has been argued that strategic posture establishes the degree of administrative uncertainty that executives encounter (i.e., cause-effect knowledge). In turn, this uncertainty partially dictates the kinds of HRM controls that executives find useful. As long as a firm's strategic posture is fairly narrow and stable (domain defense), it is argued that executives are capable of adequately prescribing and monitoring the activities of their subordinates. Consequently, behavior control systems provide the most direct means of regulating subordinate performance. However, if a firm establishes a broad and dynamic strategic posture (domain offense), executives are likely to face more uncertainty about the what subordinates do to achieve particular outcomes. Under these conditions of administrative uncertainty, executives may be limited in the extent to which they can centralize and standardize the HRM control process. It is argued that in response to administrative uncertainty, executives rely less on behavior control and more on output control to regulate subordinate performance. A summary of hypotheses is presented in Figure 8.

STRATEGY AND ADMINISTRATIVE UNCERTAINTY

Hypothesis 1: The degree to which a firm establishes a strategy of domain offense (versus defense) is positively related to the degree of administrative uncertainty experienced by executives.

ADMINISTRATIVE UNCERTAINTY AND HRM CONTROL

Hypothesis 2: Administrative uncertainty is negatively related to the use of behavior control systems and positively related to the use of output control systems.

STRATEGY AND HRM CONTROL MEDIATED BY ADMINISTRATIVE UNCERTAINTY

Hypothesis 3: Domain offense is negatively related to behavior control systems and positively related to output control systems (mediated by administrative uncertainty). .pa

Figure 8:

Summary of Hypotheses

CHAPTER 3

METHOD

3.1 Sample and Procedure

The sampling process was conducted in three steps. First, a pool of potential firms was narrowed using the five selection criteria discussed below. Second, the presidents of each of the selected firms was contacted to ask for their participation in the study. From the sample of firms where the president participated, three vice presidents were also contacted. More detail pertaining to each of these steps is provided below.

Sampling criteria. Five criteria were used to initially screen firms for inclusion in the study. First, and possibly most important, each firm had to be organized as a single business unit (with one central hierarchy) rather than having a multi-divisional (M-form) structure. This requirement was imposed in order to minimize difficulties due to firms having multiple strategies or HRM control systems in different (possibly autonomous) business units. As a consequence of this sampling criterion, firm with multiple divisions or strategic business units (e.g., General Motors, International Business Machines) were not considered for this study.

The second criterion for selecting firms was that they be legally incorporated (rather than organized as a proprietorship, a partnership, or some other form of governance). The rationale for this procedure was that corporations might be more likely to provide interested outsiders (e.g., potential investors, stockholders) access to company information.

Other firms were presumed to be more proprietary about such data. In addition, since corporations often publish objective data about the firm's activities (e.g., Standard Industry Classifications), it might be possible to use external sources to corroborate the personal views of the firms' executives.

The final three criteria used to select firms for the study each pertain to organizational size. Potential firms were required to have assets of at least $10 million, annual revenues of at least $10 million dollars, and 250 or more full time employees. These three requirements were used to make certain that the participating firms were large enough to be considered complex organizations. Research suggests that small firms might be less likely to have formalized HRM control systems in place (e.g., ASPA/BNA, 1986).

After eliminating firms based upon these five criteria, a total of 436 firms listed in the Directory of Corporate Affiliations (1987) were judged to be suitable for inclusion in the study. These firms represented an extremely wide range of industries. A heterogenous mix of firms was desireable for two reasons. First, industry variety helps to maximize variation on the independent variable (strategic posture). Harrigan (1983) argued that since firms within any one industry often have similar strategic postures, this often inadvertently restricts variance in some important theoretical variables. However, by utilizing a heterogeneous sample, it would be possible to alleviate this particular problem. Second, by sampling across a variety of industries it was possible to generalize the research findings beyond one industry, thereby increasing the external validity of the research. To assess the

most basic industry difference, potential confounding and moderating effects of manufacturing versus service industries were analyzed. These statistical tests are described more extensively in Chapter 4.

Presidents. Since this research focused on executive-level activities within the business unit as a whole, the initial contact person was the company president. Each of the presidents in the 436 firms was contacted to ask for his or her participation in the study. In those cases where the chairman, Chief Executive Officer (CEO) and president were not the same person, the president of the firm was contacted. The rationale for this procedure was that the president of the firm was the highest ranking officer with active operating responsibility in the firm. The president was also the highest ranking officer with more than one direct subordinate (a sampling condition discussed below).

Each president was mailed a cover letter and a questionnaire designed to assess the strategic posture of the firm (i.e., domain defense, domain offense). These executives more than any other in the firm are in a position to understand the overall strategic posture of the firm in its environment. In particular, Hambrick (1981) showed that executives one and two levels below the president had significantly less accurate views of their firm's strategy.

After three weeks, a prompting letter and a second questionnaire identical to the first were mailed to all those presidents who had not yet responded. In total, 140 of the 436 (32 percent) presidents agreed to participate. These executives represented firms from a wide range of industries-- a total of 50 different 2-digit SIC catagories (e.g.,

retail clothing, restaurants, banking, public utilities, computers, peripherals, steel, oil and gas, hotels, consumer products, insurance, air transportation, trucking, restaurants, construction).

As stipulated above, each participating firm was organized as a single business unit. In addition, the 1985 mean asset value for these firms was $501 million, their mean revenue figure was $415 million, and the mean number of full time employees was 2,306. Eighty-eight of these firms trade their stock publicly; 11 on the American Stock Exchange (ASE), 36 on the New York Stock Exchange (NYSE), and 41 over the counter (OTC). A complete list of participating firms is provided in Appendix B.

Vice presidents. After providing information themselves, each president was also asked to also disclose the names of three of their immediate subordinate executives in line positions (e.g., manufacturing, marketing) who would also participate in the study. Of the 140 participating presidents, 102 (73 percent) provided the names of three of their subordinate executives (e.g., COO, executive vice president, senior vice president, vice president). This created a potential pool of 306 vice presidents representing 102 firms. Each of the 306 vice presidents was contacted and asked to complete a questionnaire which measured his or her level of administrative uncertainty, and HRM control practices.

By utilizing multiple sources (presidents and vice presidents) it was possible to obtain independent assessments of strategic posture, administrative uncertainty and HRM control. In this manner, problems

due to common method variance (i.e., percept-percept bias) could be minimized.

Three weeks after sending the questionnaire to the vice presidents, a second questionnaire and prompting letter was mailed. Usable data was obtained from 175 of the 306 vice presidents (57 percent). In total, information from the president and all three vice presidents was obtained from 25 firms (see Table 1), information from the president and two vicepresidents was obtained from 36 firms, information from the president and one vice president was obtained from 28 firms. The usable sample size for this study was n= 89. This number represents the firms where the president and at least one vice president responded. These figures are summarized in Table 1.

3.2 Measures

Prior to conducting this study, each of the measurement scales was pilot tested on a separate sample of managers. Discussion of this pilot study is provided in Appendix C.

Industry type. In order to make a distinction in this study between firms in manufacturing versus service industries, the Standard Industry Classification Codes reported in Standard and Poor's Directory of Corporate Affiliations (1986) were examined. These codes indicate the firm's major industrial group(s). There are 10 major SIC divisions: (01-09) agriculture, forestry, and fishing, (10-14) mining, (15-17) construction, (20-39) manufacturing, (40-49) transportation, communication, electric, gas, and sanitary services, (50-59) wholesale and retail trade, (60-67) finance, insurance, and real estate, (70-89)

Table 1:

Sampling Distribution by Firm and by Executives

	FIRMS freq/cum freq	EXECUTIVES freq/cum freq
RESPONDENTS PER FIRM		
- President + 3 VPs	25/25	100/100
- President + 2 VPs	36/61	108/20
- President + 1 VP	28/89 *	56/264
- President	51/140	51/315

* Total number of firms where president and at least one VP repsonded

services, (91-97) government, and (99) nonclassifiable establishments. Manufacturing firms were those who reported their dominant business in SIC codes 1-49. Service firms were those that reported their dominant business being in SIC catagories 50-89. These data were collected to check for potential confounds in the data due to industry type.

Organization size. Organization size was operationalized in this study as the natural log of full time employees. This information was collected from Standard and Poor's Directory of Corporate Affiliations (1986). These data were collected to check for potential confounds in the data due to organization size.

Strategic posture. Strategy was operationalized in the present study using eleven Likert scale items designed to measure the extent to which a firms mix of products, services, customers, and markets are broad and dynamic (see Appendix C). The specific items are shown in Figure 9.

Administrative uncertainty. The measure of administrative uncertainty was an extension of the item used by Ouchi and Maguire (1975) and Ouchi (1978) to measure cause-effect knowledge. The present measure consisted of of eleven items designed to determine the extent to which executives can observe and predict the linkage between what subordinates do and the results they achieve. These items are shown in Figure 10.

HRM control. The measures of HRM control were based upon work research by Kerr (1985), Lorsch and Allen, (1974), Michael (1974), Miles and Snow (1978), Ouchi and Maguire (1975) and Ouchi (1977, 1978). Particular combinations of HRM measures were used to detect the overall

* Our firm offers a narrow range of products (reverse).
* The characteristics of our products differ a great deal from one another.
* The characteristics of our products and services are modified frequently.
* Our firm maintains a stable posture in our product-market (reverse).
* Our firm is at the forefront of innovation and development.
* When our customers purchase from us, they buy many different things.
* The needs of our customers vary quite a bit from one year to the next.
* Our firm sells to a wide variety of customers.
* The needs of our customers are very similar to one another (reverse)
* Our firm offers many different services to customers.
* Our business procedures have changed several times in the last few years.

Figure 9:

Measures of Strategic Posture

* I find it difficult to monitor the behavior of my subordinates.

* The relationship between the actions my subordinates take and the outcomes they achieve changes over time.

* I can usually distinguish between effective and ineffective managers by watching their actions on the job (reverse).

* My subordinates must often act in very different ways in order to achieve the same outcome.

* At the time they occur, I cannot usually observe most of the duties my subordinate managers perform.

* Cause-effect relationships are stable in my subordinate's job (reverse)

* I sacrifice detail of supervision for breadth/scope of managing.

* It is difficult to predict in advance how successful my managers will be as a consequence of the actions they take.

* I am not in a position to see exactly what actions my mangers take to achieve the results they do.

* It is infeasible to try to formulate a set of "tried and true" standardized procedures for my mangers to follow.

* I am unable to personally gauge the entire range of subordinates' behavior.

Figure 10:

Measures of Administrative uncertainty

use of behavior control systems and output control systems. The complete list of HRM control measures is shown in Figure 11.

(1) Behavior control: Behavior control was measured by twelve Likert scale items which assess the degree to which decisions about performance programs are set top-down (i.e., centralized), performance is measured using personal observation of subordintate behavior, appraisal is based upon improvement over time, and feedback is provided frequently to subordinates.

(2) Output control: Output control was measured by twelve Likert scale items measuring the degree to which performance standards are flexible, rewards are contingent on performance, performance is measured vis a vis results achieved, performance evaluations are based upon achievement of preset standards (targets).

BEHAVIOR CONTROL

* My managers and I consult with one another in setting goals (reverse).

* Performance goals for my managers are imposed top-down.

* My managers assume responsibility for setting their goals (reverse).

* When I evaluate my subordinates, I place primary weight on the effectiveness of their behavior.

* My managers are held accountable for their actions, regardless of results.

* I do not concern myself with the particular procedures and methods my managers use on the job (reverse).

* To evaluate my managers, I contrast their past with their present performance records.

* I give higher ratings to managers who show improvement.

* Prior accomplishments of my managers have little affect on my appraisal of their performance (reverse).

* Members in our firm receive frequent information about their performance.

* Long lag periods are required to give feedback to my managers about their performance (reverse).

* I arrange frequent meetings with my managers to discuss performance problems and issues.

Figure 11:

Measures of HRM Control

OUTPUT CONTROL

* Performance targets for my people are written in stone (reverse).

* Performance objectives are established initially as a starting point, but are modified frequently.

* My managers' performance objectives are designed to allow for flexibility and change.

* It is infeasible to lock my managers into fixed target.

* A sizable amount of subordinates' pay consists of performance-based rewards.

* Most of the differences in pay among my managers represent differences in their performance levels.

* The rewards my managers receive are linked to results.

* My team of managers are paid on straight salary (reverse).

* When I evaluate my subordinates, I place primary weight on their documented results.

* I use numerical records of my managers' performance as the chief indicator of their effectiveness.

* Regardless of what my managers may be like personally, their performance is judged by their results.

* I use pre-established standards as the benchmark for evaluating my subordinates' performance.

* Those managers who do not reach their objectives receive lower performance ratings.

* Regardless of absolute accomplishments, I appraise my managers on whether they reach their goals.

Figure 11 (continued)

CHAPTER 4

RESULTS

4.1 Internal Consistency of Measurement Scales

The first step in analyzing the obtained data was assessing the internal consistency reliability of each of the measures. For this analysis, Chronbach's alpha coefficient was calculated using the responses obtained from the participating executives. The results of these analyses are shown in Tables 2-4 and discussed below.

Strategic posture. For the measure of strategic posture, the responses from presidents in the 89 usable firms were analyzed. Upon examination of the item-total correlations, two of the 11 items (see Table 2) proved to be very poorly correlated with the others. Consequently, these items were deleted from the scale leaving a nine item measure which yielded an alpha coefficient of .84.

Administrative uncertainty. For the measure of administrative uncertainty, the responses from one vice president in the 89 usable firms were analyzed. In cases where more than one vice president responded per firm, only the one in a line position (e.g., manufacturing, marketing) was used. The measure of administrative uncertainty did not show extremely high internal consistency. Upon examination of the item-total correlations, three of the 12 items (see Table 3) proved to be very poorly correlated with the others. Consequently, these items were deleted from the scale leaving a nine item measure which yielded an alpha coefficient of .67.

Table 2:

Item Total Correlations and Alpha Coefficient
for Measure of Strategic Posture (n=89)

	Item-total Correlation
Our firm offers a narrow range of products (reverse).	.70
When our customers purchase, they tend to buy many different things.	.52
The characteristics of our products differ great deal from one another.	.67
Our firm sells to a wide variety of customers.	.38
The needs of our customers are very similar to one another (reverse).	.52
Our firm offers many different services to customers.	.59
Our firm maintains a stable posture in our product-market (reverse).	.22
Our firm is at the forefront of innovation and development.	-.11x
Our business procedures have changed several times in past years.	.11
The characteristics of our products and are modified frequently.	.43
The needs of our customers vary quite a bit from one year to the next.	.42
Alpha	.84

x item deleted in final scale

Table 3:

Item-Total Relations and Alpha Coefficient for Measure of Administrative Uncertainty (n=89)

	Item-total
I find it difficult to monitor the behavior of my subordinates.	.28
I can usually distinguish between effective and ineffective managers by watching their actions on the job (reverse coded).	.11x
At the time they occur, I cannot usually observe most of the duties my subordinate managers perform.	.50
I sacrifice detail of supervision for breadth/scope of managing.	.38
I am not in a position to see exactly what actions my managers take to achieve the results they do.	.40
I cannot personally gauge the entire range of subordinate behavior.	.42
The relationship between the actions my subordinates take and the outcomes they achieve changes over time.	.28
My subordinates must often act in very different ways in order to achieve the same outcome.	.07x
Cause-effect relationships are stable in my subordinate managers' jobs (reverse coded).	.06x
It is difficult to predict in advance how successful my managers will be as a consequence of the actions they take.	.32
It is infeasible to try to formulate a set of "tried and true" standardized procedures for my mangers to follow.	.30
Alpha	.67

x item deleted in final scale

Table 4:

Item-Total Relations and Alpha Coefficients
for Measure of Behavior Control (n=89)

	Item-total Correlation
My subordinates assume responsibility for setting their own performance goals (reverse).	.13x
My managers and I consult with one another in setting their performance goals (reverse).	.38
Performance goals for my managers are imposed top-down.	.32
When I evaluate my subordinates, I place primary weight on the effectiveness of their behavior.	.09x
y managers are held accountable for their actions, regardless of their results.	.28
I do not concern myself with the particular procedures and methods my managers use on the job (reverse).	.38
My subordinates receive frequent information about their performance.	.37
Long lag periods are required to give feedback to my managers about their performance (reverse).	-.12x
I arrange frequent meetings to discuss subordinate performance.	.46
To evaluate my mangers, I contrast their past with their present performance.	.36
I give higher ratings to mangers who show improvement	.27
Prior accomplishments of my managers have little affect on my appraisal of their performance (reverse).	.26
Alpha	.69

x item deleted in final scale

Table 5:

Item-Total Correlations and Alpha Coefficient
for Measures of Output Control (n=89)

	Item-total Correlation
Performance targets for my people are written in stone (reverse).	.27
Performance objectives are established initially as a starting point but are modified frequently.	.15x
Performance objectives are designed to allow flexibility and change.	.36
It is infeasible to lock my managers into fixed target.	.38
A sizable amount of my subordinates' pay consists of performance-based rewards.	.62
Most of the differences in pay among my managers represent differences in their performance levels.	.20
The rewards my managers receive are linked to results.	.46
My team of managers are paid on straight salary (reverse coded).	.36
When I evaluate my subordinates, I place primary weight on documented results.	.41
I use numerical records of my managers' performance as the chief indicator of their effectiveness.	.52
Regardless of what my managers may be like personally, their performance is judged by their results.	.01x
I use pre-established standards as the benchmark for evaluating my mangers' performance.	.20
Those managers who do not reach their objectives receive lower ratings.	.41
Regardless of absolute accomplishments, I appraise my managers on whether they reach their goals.	.41
Alpha	.77

x item deleted in final scale

Table 6:

Means, Standard Deviations, and Alpha Coefficients (n=89),

.

	mean	sd	alpha
Strategy	3.72	1.56	.84
Uncertainty	3.31	1.33	.67
HRM Control			
- behavior	4.93	1.21	.69
- output	4.58	1.32	.77
Size (Employees)	2306.88	3085.31	na
Assets (millions)	501.00	1310.00	na
Revenues (millions)	415.00	1570.00	na
ROA	.07	.05	na
ROE	.13	.08	na

(a) Asset and revenue figures presented in millions of dollars.

Human resource management control. The measure of behavior control showed acceptable internal consistency. However, upon examination of the item-total correlations, three of the 12 items (see Table 4) proved to be very poorly correlated with the others. Consequently, these items were deleted from the scale leaving a nine item measure which yielded an alpha coefficient of .69. Similarly the measure of output control yielded an acceptable alpha. However, three of the 12 items (see Table 5) were poorly correlated with the others. These items were deleted leaving a nine item measure with an alpha of .77.

In summary, the internal consistency reliability of the measures were all at or near the acceptable level recommended by Nunnally (1978). In particular, he argued that psychometric measures should have alphas of .70 or greater for use in exploratory research. Table 6 shows the means, standard deviations and alpha coefficients for each of the measures.

4.2 Hypothesis Testing

To test hypotheses 1-3, the zero order correlations between the relevant measures were assessed. The results of these analyses are reported below.

Strategic posture and administrative uncertainty. In order to test Hypothesis 1, the zero order correlation between strategic posture and administrative uncertainty was examined (see Table 7). This relationship was not statistically significant ($r = .10$). Therefore, from this analysis, it cannot be argued that administrative uncertainty occurs as a result of the information processing requirements associated

with strategic posture. This finding fails to provide support for Hypothesis 1 and is also inconsistent with findings reported by other researchers (e.g., Chandler, 1962; Egelhoff, 1983).

Administrative uncertainty and HRM control. In order to test Hypothesis 2, the zero order correlations between administrative uncertainty (i.e., cause-effect knowledge) and the two measures of HRM control (i.e., behavior, results) were examined (see Table 8). Neither of these two relationships achieved statistical significance. The correlation between uncertainty and behavior control was $r = -.05$, while the correlation between uncertainty and output control was $r = -.06$. These findings fail to support Hypothesis 2 and are inconsistent with previous research by Ouchi (1977), Ouchi and Maguire (1975) and Thompson (1967).

It is also noteworthy that behavior control and output control were positively correlated ($r = .26$, $p < .05$). Although this finding does not directly pertain to any hypothesized relationship in the study, it is inconsistent with previous research findings (e.g., Ouchi and Maguire, 1975) and the research model proposed for the current study. In general it has been posited that behavior control and output control are independent or inversely correlated. This finding is clearly counter to that notion.

Strategic posture and HRM control mediated by uncertainty. In order to test Hypothesis 3, the zero order correlations between strategic posture and the two measures of HRM control were examined (see Table 7). Neither of these relationships achieved statistical significance. The correlation between strategic posture and behavior

Table 7:

Zero Order Correlations Among Measures of
Strategic Posture Administrative Uncertainty and HRM Control

	1	2	3	4
1. strategy	--			
2. uncertainty	.10	--		
3. behavior	-.06	-.05	--	
4. output	.06	-.06	.26*	--

* p<.05

** p<.01

control was r = -.06, while the correlation between strategy and output control was r = .06. These findings fail to meet the preliminary requirements to support Hypothesis 3. As a second step in this analysis (if the original correlations would have been significant), administrative uncertainty would have been partialled out of the strategy-HRM relationships. Evidence of mediation would exist when an otherwise significant correlation between strategic posture and HRM control drops (perhaps to nonsignificance) when administrative uncertainty is factored out. However, since the strategy-HRM relationships were not statistically significant, this second procedure was not appropriate. In summary, there is no evidence in these data that provides support for Hypothesis 3.

4.4 Controlling for Industry Type

An additional check was made on these data by examining the potential confounding and moderating effects of industry type (manufacturing versus service). The findings pertaining to these analyses are discussed below.

Confounding effects. Industry type was negatively correlated with the measure of strategic posture ($r = -.40$, $p < .01$). As shown in Table 8, manufacturing firms were more likely to establish a posture of domain defense while service firms were likely to establish a posture of domain offense. This finding is not particularly surprising when one considers the fact that capital requirements associated with manufacturing firms are frequently a cause of bureaucratic momentum.

Given the fact that industry type was not statistically correlated with either administrative uncertainty or HRM control, it would be impossible for a confounded relationship to exist. However, since industry type was negatively correlated with strategy, it might be the case that industry type might suppress the strategy-uncertainty or strategy-HRM relationship. Consequently, industry was partialled out of the strategy-uncertainty and strategy-HRM relationships. The findings are reported in Table 9. Even after this procedure, none of the relevant relationships achieved statistical significance.

Moderating effects. It was reasoned that industry type might also be a potential moderator of the strategy-uncertainty, uncertainty-HRM and strategy-HRM relationships. In other words, strategy might be related to administrative uncertainty and HRM control in some industries (e.g., manufacturing) but not in others (e.g., service). Hierarchical regression was used to test this proposition (see Table 10). None of the tests for moderation proved statistically significant.

4.5 Controlling for Organization Size

One further check was made on these data by examining the potential confounding and moderating effects of organization size on the strategy-uncertainty-HRM relationship. The findings pertaining to these analyses are discussed below.

Confounding effects. Organization size was positively correlated with the measure of strategic posture ($r = .21$, $p < .05$). This indicates that larger firms were more likely to establish a strategic posture of domain offense (see Table 8). Interestingly, when industry

Table 8:

Zero Order Correlations:
Industry Type and Organization Size with
Strategic Posture, Administrative Uncertainty and HRM Control

		industry	size
1.	industry	--	
2.	size	-.20*	--
3.	strategy	-.40**	.21*
4.	uncertainty	.03	.19*
5.	behavior	-.05	.07
6.	output	-.07	.16

* $p<.05$

** $p<.01$

Table 9:

Zero Order Correlations and
First Order Partial Correlations (in parentheses)
Controlling for Industry Type

	1	2	3	4	5
1. size	--				
2. strategy	.21* (.11)	--			
3. uncertainty	.19* (.19*)	.10 (.12)	--		
4. behavior	.07 (.06)	-.06 (-.11)	-.05 (-.02)	--	
5. output	.16 (.15)	.06 (.00)	-.06 (-.06)	.26* (.26*)	--

* p<.05
** p<.01

Table 10:

Hierarchical Regression:
Moderating Effects of Industry Type

Dependent variable	R^2	ΔR^2	F
UNCERTAINTY			
step 1: strategy	.01	.01	.68
step 2: industry	.02	.01	.64
step 3: strategy x industry	.02	.00	.49
BEHAVIOR CONTROL			
step 1: strategy	.00	.00	.24
step 2: industry	.02	.02	.90
step 3: strategy x industry	.02	.00	.60
BEHAVIOR CONTROL			
step 1: uncertainty	.00	.00	.03
step 2: industry	.01	.01	.44
step 3: uncrtnty x industry	.01	.00	.36
OUTPUT CONTROL			
step 1: strategy	.00	.00	.08
step 2: industry	.00	.00	.20
step 3: strategy x industry	.01	.01	.22
OUTPUT CONTROL			
step 1: uncertainty	.00	.00	.08
step 2: industry	.00	.00	.20
step 3: uncrtnty x industry	.01	.01	.22

type was partialled out of this relationship, the correlation dropped to non-significance (see Table 9). This indicates that the strategy relationship was due in large part to the fact that firms in service industries tend to adopt domain offensive strategies.

In addition, organization size was positively correlated with administrative uncertainty ($r = .19$, $p < .05$). This indicates that executives in larger firms have less understanding of the cause-effect relationships in their subordinates' jobs than executives in small firms. This finding supports the arguments made by Chandler (1962), Child (1972), and Kimberly (1976).

Despite the fact that organization size was positively correlated with strategy and administrative uncertainty, no possibility of a confounded relationship existed between strategy and uncertainty since strategy and uncertainty were not correlated with one another. Likewise, there was no possibility that size was a confound in the strategy-HRM or uncertainty-HRM relationship since neither strategy nor uncertainty correlated with HRM controls (see Table 11).

Finally, even after simultaneously partialling out both industry type and organization size, none of the theoretical relationships changed significantly (see Table 12).

Moderating effects. Similar to the situation discussed above regarding industry type, it was reasoned that organization size might be a potential moderator of the strategy-uncertainty, uncertainty-HRM and strategy-HRM relationships. Hierarchical regression was used again. (see Table 13). None of the results were significant.

Table 11:

Zero Order Correlations and
First Order Partial Correlations (in parentheses)
Controlling for Organization Size

		1	2	3	4	5
1.	industry	--				
2.	strategy	-.40** (-.40**)	--			
3.	uncertainty	.03 (.08)	.10 (.06)	--		
4.	behavior	-.05 (-.09)	-.06 (-.07)	-.05 (-.04)	--	
5.	output	-.07 (-.04)	.06 (.01)	-.06 (-.09)	.26* (.26*)	--

* p<.05
** p<.01

Table 12:

Zero Order Correlations and
Second Order Partial Correlations (in parentheses)
Controlling for Both Industry Type and Organization Size

		1	2	3	4
1.	strategy	--			
2.	uncertainty	.10 (.10)	--		
3.	behavior	-.06 (-.12)	-.05 (-.02)	--	
4.	output	.06 (-.01)	-.06 (-.09)	.26* (.25*)	--

* p<.05
** p<.01

Table 13:

Hierarchical Regression:
Moderating Effects of Industry Type

Dependent variable	R^2	ΔR^2	F
UNCERTAINTY			
step 1: strategy	.01	.01	.67
step 2: size	.04	.03	1.56
step 3: strategy x size	.04	.00	1.13
BEHAVIOR CONTROL			
step 1: strategy	.00	.00	.24
step 2: size	.01	.01	.38
step 3: strategy x size	.01	.00	.39
BEHAVIOR CONTROL			
step 1: uncertainty	.00	.00	.03
step 2: size	.01	.01	.27
step 3: uncertainty x size	.04	.03	1.00
OUTPUT CONTROL			
step 1: strategy	.00	.00	.09
step 2: size	.00	.00	.05
step 3: strategy x size	.00	.00	.09
OUTPUT CONTROL			
step 1: uncertainty	.00	.00	.32
step 2: size	.00	.00	.19
step 3: uncertainty x size	.01	.01	.14

CHAPTER 5:

DISCUSSION

In this chapter, three topics are covered. First, an overview of findings is discussed in terms of how present results compare with previous research. Second, construct validity issues are discussed in terms of how measurement error might limit the findings in this research. Third, limitations of this research are discussed and directions for future investigations are noted.

5.1. Overview of Findings

Despite evidence in the literature to substantiate each of the hypotheses put forth in this study, no empirical support for the research model was found. Findings pertaining to each of the theoretical linkages are discussed below.

Strategic posture and administrative uncertainty. Previous researchers have argued that administrative uncertainty arises out of the information processing demands of strategy (e.g., Chandler, 1962; Egelhoff, 1982). In particular, it has been theorized that strategic diversity or change (i.e., domain offense) increases the amount and variety of information that executives must acquire and process. Relative to their information processing capabilities, executives are overburdened and experience administrative uncertainty.

In the present sample, this hypothesis was not supported-- a finding inconsistent with previous research (e.g., Chandler, 1962; Egelhoff, 1982; Rumelt, 1974). It is interesting to note that in previous studies, researchers have merely inferred that administrative

uncertainty derives from the strategic posture of firms. While the notion of information processing demands has provided the theoretical basis for positing a strategy-organization relationship, no one has empirically tested this proposition (e.g., Thomas and McDaniel, in press).

While it is impossible to support a null hypothesis, the present findings cast some doubt on the strategy-uncertainty hypothesis. Possibly the relationship is not as straight forward as originally thought. Perhaps future research might examine this issue in more detail. For example, span of control may moderate the relationship between strategy and administrative uncertainty. Galbraith (1973) argued that when executives encounter greater levels of uncertainty, they build hierarchies to help reduce their information processing requirements. It might be the case that as firms complicate their strategic posture, executives reduce their span of control (e.g., by adding hierarchical levels) thereby increasing their capacity to observe the activities of their immediate subordinates.

Future research might also try to reframe this research question by identifying other causes of administrative uncertainty-- not only for executives, but for other managers as well. For example, in this study it was shown that administrative uncertainty is systematically related to organization size. This relationship has been shown by in previous research (e.g., Chandler, 1962; Child, 1972; Hickson, Pugh, Phesey, 1969; Pugh, Hickson, Hinings, and Turner, 1968; 1969). In addition, past research suggests that administrative uncertainty may be a function of technology (Reeves and Woodward, 1970), structure (Galbraith, 1973),

or job characteristics (Perrow, 1970; March and Simon, 1958). Any or all of these factors, coupled with the strategic demands of the firm, may reveal a great deal more about the limits placed on a manager's sphere of administration.

Administrative uncertainty and HRM. Previous researchers have argued that the types of controls used by executives are a function of the administrative uncertainty they encounter (e.g., March and Simon, 1958; Thompson, 1967). In particular, Ouchi (1977) and Ouchi and Maguire (1975) found that cause-effect knowledge was negatively related to behavior control and positively related to output control. Based upon these findings, it was hypothesized that when executives could not monitor and evaluate the actions of their subordinates (i.e., behavior control), they would attach extrinsic rewards to performance results (i.e., output control). However, the findings from the present study do not support this conclusion.

In general, executives in this sample tended to use behavior controls quite a bit (refer to Table 6, Chapter 4, Section 4.1) regardless of whether they experienced administrative uncertainty or not. This tends to support Hofstede's (1980) argument that superiors may hold fast to certain control practices (e.g., close supervision) as rituals-- even under circumstances where these efforts only provide superiors the illusion of control.

Strategy and HRM mediated by administrative uncertainty. The primary theme in this research was that strategy, as a direct determinant of administrative uncertainty, is an indirect determinant of

HRM control. This general thesis was derived through combining the tested arguments of previous researchers.

As discussed previously, strategic posture was not significantly related to administrative uncertainty. Likewise administrative uncertainty was not related to either form of HRM control. Finally, strategic posture bore no relationship to HRM control-- neither direct nor indirect.

Perhaps HRM control is not tightly coupled to the strategic activities of a firm. It may be the case that HRM practices vary according to some other imperative (e.g., task characteristics) or are completely independent of organizational context. One dissenting view pertaining to the likelihood of a relationship between HRM and performance is based on the idea of managing slack resources. Child (1972) argued that if a firm's performance exceeds a satisfactory level, then executives may decide that this margin of surplus allows them to manage in a way more in accord with their personal preferences (even at the expense of maximizing profits, etc.). Related to the management of human resources, this may mean, for example, that executives align HRM practices to organizational necessity only until performance is satisfactory. At that time, they may switch to a management style they personally prefer, even though this style may be opposite of that optimally required to maximize performance. Such an occurrence would diminish any empirical relationship between HRM and strategic performance.

In this light, future research need not abandon the strategy-HRM linkage. There are several other avenues for investigation. For

example, might examine alternative theories which explain the strategy-HRM relationship. As mentioned previously, Schuler and Jackson (1987) have taken the position that "required behaviors" are the principle factor by which executives align their HRM practices with the demands of strategy. Miles and Snow (1978) theorized that the connecting factor lay in the technology of the firm.

In addition, future research might attempt to examine both strategy and HRM in closer detail. It was not possible to measure each isolated aspect of strategic posture or HRM control (e.g., feedback, rewards) independently in this study due to the number of items used in the research questionnaire. Consequently, a great deal of pertinent information may have gone undetected. The interested researcher might recast the research question and operationalize the constructs with greater precision.

Future researchers might also consider whether other organizational factors influence HRM practices. This information would help to develop a more comprehensive understanding of the HRM system. A rich literature has accumulated in the fields of organization theory and economics regarding the organizational determinants of control systems in general. Rackham and Woodward (1970), for example, studied the relationship between technology and control; Galbraith (1973) studied structure and control; Pugh et. al. (1968, 1969) studied size and control; Khandwalla (1973) studied environment and control, Bearl and Means (1932) studied ownership and control. This list is not exhaustive, nor have these researchers studied HRM controls per se. Rather, these studies are .pa

noted here only to demonstrate that there are many different avenues open to research on HRM control.

Finally, future research might explore the possibility that HRM control systems can improve firm performance if and when they are aligned with organizational activities. In this sense, HRM control systems may not be something that automatically adjust to the context of strategy. Rather it may be the case that HRM controls must be proactively aligned as a device for improving performance (Schuler and Jackson, 1987). This possibility raises the issue of HRM as a functional-level strategy (Hofer and Schendel, 1978).

5.2 Construct Validity of Measures

Aside from issues related to hypothesis testing, perhaps the most relevant points of discussion pertain to the research process itself. In the section below, several topics related to construct validity of measures are discussed. Construct validity involves the extent to which the operational measures corresponded to the constructs of interest in the study (Schwab, 1980). Although there is no single index of a measure's construct validity (Campbell and Fiske, 1959), three empirical conditions lend support to its existence: (1) reliability, (2) convergent validity, and (3) divergent validity. In addition, definitional and theoretical issues also play a vital role (Schwab, 1980). These issues, both empirical and conceptual, are addressed below.

Strategic posture. As shown in Table 2 (Chapter 4, Section 4.1), the measure of strategic posture showed acceptable internal consistency

reliability (alpha = .84). This provided evidence that the measure was not deficient due to random error -- the first criterion for demonstrating construct validity (Nunnally, 1978).

However, there was no effort to demonstrate convergent validity of the measure of strategic posture; that is convergence among maximally different methods of measuring the same construct (Campbell and Fiske, 1959). By only using information obtained froms company presidents to assertain the strategic posture of the firm, there is no way to rule out the possibility that data collected represent idiosyncratic responses of those executives. While it has been argued that the chief executive represents the single best informant about strategic posture (Hambrick, 1981), these data might have been corroborated with additional indices of strategic posture (e.g., archival data, competitors perspectives). These additional data points would support an argument for the convergent validity of the measure.

In addition, no attempt was made to demonstrate divergence among alternative views of strategy. Only information pertaining to domain defense and offense was collected. However, as discussed below there are many alternative methods for conceiving and measuring strategy. The lack of divergence raises some doubt about exactly what aspects of strategic posture was represented in the measurement scales.

Beyond empirical evidence of construct validity for the measure of strategic posture, one might also reflect on the definitional nature of the construct as well. In the present study, the two strategic types (domain defense, domain offense) were operationalized along a single continuum. However, there is no empirical evidence to confirm that

offense and defense can be conceived as polar opposites. In fact, Miles (1984) discusses the possibility that the two strategies may at times be independent. This points to the critical task of carefully defining the constructs in use before they are operationalized in research (Schwab, 1980).

In general, there has been a trend among strategy researchers to increase the precision with which they define and operationalize their constructs (e.g., Hambrick, 1980; Venkatraman and Grant, 1986). Previously, researchers have developed typologies of strategy which obscure the distinction between individual dimensions (e.g., Miles and Snow, 1978; Miller and Friesen, 1977). The current research trends may help isolate the illusive boundaries of the strategy construct (Ansoff, 1979; Mintzberg, 1978).

Administrative uncertainty. The internal consistency for the measure of administrative uncertainty was less than optimal-- especially given the number of items utilized in the scale (alpha = .67). This indicates that some degree of random error existed in the measurement of this construct. As noted previously, random error places an upper limit on the degree to which a measure can demonstrate construct validity (Schwab, 1980). In addition, random error diminishes the capacity of a measure to detect systematic relationships among constructs (Nunnally, 1978). This increases the possibility of committing a Type II error (retention of the null hypothesis when it is false). It is quite possible that administrative uncertainty was not related to either strategic posture and HRM control systems simply because the measure was too insensitive to detect such a relationship. This points to the

importance of improving the internal consistency of this measure in future research.

No effort was made to demonstrate the convergent validity of the measure of administrative uncertainty. Since the construct was defined and operationalized as a perceptual variable in this study, it might be argued that it only exists in the minds of individuals-- and may not be an organizational characteristic. Additional indices of this same construct would lend support to the validity of the measure. If there is no corroborative evidence to support administrative uncertainty as an organizational characteristic, it may be better to study the construct as a micro-level phenomena. As Schwab (1980, p. 12) noted:

> It appears especially important in the study of organizational behavior to specify the appropriate level of analysis when defining constructs. Much confusion has been created because the construct referent has not been made clear in the definition and/or moving from definition to measurement.

Finally, no attempt was made to demonstrate divergence of the administrative uncertainty construct from other forms of uncertainty (e.g., environmental uncertainty, task uncertainty). Thompson (1967), for example, posited a second form administrative uncertainty in addition to cause-effect knowledge. He referred to this as "standards of desirability" (the extent to which performance standards are crystallized versus ambiguous). Perhaps other views of administrative uncertainty such as these would be more appropriate for studying determinants of HRM control in future research.

Uncertainty, in general, has been a difficult construct to define and operationalize (Milliken, 1987). Administrative uncertainty represents only a special case of a more general phenomenon. Future theory and research might isolate the boundaries of these constructs and further separate them from other constructs such as equivocality, ambiguity, and noise (Daft and Lengel, 1986; March and Olsen, 1976; Weick, 1979).

Human resources management control. The internal consistency reliabilities for behavior control (alpha = .69) and output control (alpha = .77) were rather modest. Since much previous research on control has been qualitative at best and anecdotal at worst (e.g., Michael, 1973; Turcotte, 1974), the present attempt to develop empirical measures represents a step toward more rigorous research. The lack of findings in this study calls into question some of the results of previous research. However, it is impossible to rule out the fact that the null findings are due to Type II error (given the reliability of the measures). This possibility alone highlights the importance of developing psychometrically sound measures of HRM control for future research.

As with the other measures utilized in this study no evidence of convergent validity exists for the measures of HRM control. Other researchers have operationalized HRM measures differently using participant observation (e.g., Kerr, 1985; Miles and Snow, 1978), interviews with human resource executives (Miles and Snow, 1984) and surveys (Ouchi, 1977; Schuler and Jackson, 1987). These alternative .pa

methods would help support the construct validity of the measures used in the present study.

The correlation between the two measures of HRM control ($r = .28$) suggests that the constructs of behavior control and output control are not independent. This provides counter evidence of divergent validity. Future research must probe more deeply to determine exactly which HRM practices constitute behavior control and which constitute output control-- if indeed this distinction actually is useful for characterizing HRM. The present framework was developed by combining the previous findings of other researchers. However, a great deal more conceptual and empirical work is needed to understand these issues.

5.3 Study Limitations

There are several additional limitations in this research (beyond those addressed in Sections 5.1 and 5.2) which should be considered when reviewing the present findings.

Dimensions of strategic posture. The present study examined only a small subset of possible strategy dimensions. In particular, domain offense and defense are only two aspects of strategic posture. Two additional aspects might be degree of vertical integration and extent to which competitive advantage is based upon a low cost position or product-market differentiation. Each one of these strategic issues has been discussed anecdotally in terms of required HRM practices (Gupta, 1984; Miles and Snow, 1984; Porter, 1980). However, only Schuler and Jackson (1987) have begun to exam the relationships empirically. The point to note is that each alternative view of strategy may pose a

different agenda for research. As the concept of strategy changes, so too might the perspective taken on HRM.

Dimensions of HRM control. A second limitation of this study is that it also only examined a subset of possible HRM practices. Given the theoretical thrust of this study (i.e., control), focus centered on appraisal and reward systems. Additional research might address issues such as staffing, training, career development, and labor relations. Several researchers (e.g., Ouchi, 1978) have argued that these practices serve as a type of input control (i.e., controlling the antecedent conditions of performance rather than behavior or output per se).

By examining these other HRM practices, it might be possible to identify other patterns of HRM practices in addition to behavior and output control. As was stated before, the concept of strategy is defined as a pattern in decisions and resource deployments (Hofer and Schendel, 1978; Mintzberg, 1978). Taken to the specific level of HRM, different patterns in HRM practices can be characterized as alternative "functional area strategies" (Hofer and Schendel, 1978, p. 29). A great deal more work is necessary to fully understand the composition of HRM strategies, if indeed they exist. However, this kind of research has already begun (e.g., DeBejar and Milkovich, 1986; Govindarajan, 1988; Miles and Snow, 1984; Schuler and Jackson, 1987).

Sampling procedures. A third limitation of the study is that the measurement procedure may have been constrained in that only single business firms were selected for the study. This sampling procedure was viewed as desirable in order to limit the investigation to practices occurring within one business unit (to assure that only one type of HRM

control system was operating). Nevertheless, the sampling procedure probably restricted the range of the variables somewhat. It is quite possible that different findings would have been discovered if the data were collected in multi- divisional firms. For example, Lorsch and Allen (1973), Kerr (1985) Ouchi and Maguire (1975), Pitts (1976), and Schuler and Jackson (1987) all examined business units within multi-divisional firms.

In addition, the procedure used to sample firms (contacting firms listed in Standard and Poor's Directory of Corporate Affiliations) has the inherent weaknesses of a convenience or accidental sample (Kidder, 1981). For example, while every company meeting the five sampling requirements was contacted, data could only be obtained from a portion of this potential pool. This procedure introduces the possibility of bias in data collection. In particular, it is impossible to determine if participating firms differed from those in the population that did not participate (on the relevant research variables). A preferred technique would have been to utilize random sampling or stratified random sampling in which case each firm from the population would have an equal chance of being sampled. This opportunity is rare in most organizational research. When executives have the opportunity to accept or refuse the invitation to participate, convenience sampling is a necessity.

Cross-sectional Data. A fourth limitation of this study was that the data were collected cross-sectionally. While the theory posited causal phenomena (e.g., strategy causes uncertainty, which then causes HRM control), the data only depict relationships existing at one point

in time. For this reason, no causal inferences could be made utilizing the present data set.

5.4 Conclusion

Despite the paucity of empirical support for the model put forth, what stands out most from this study is that HRM controls can, in fact, be conceived as a pattern of activities used in conjunction with one another. The internal consistency of the two measures of HRM control coupled with their divergence from one another lends support to this premise. Virtually no other statement can be made in support of the research model.

This perspective represents somewhat of a departure in HRM research. Generally, HRM practices are viewed as independent variables; techniques that influence such things as individual satisfaction and performance. However, the current switch toward viewing HRM as an dependent variable may help the development of an overall theory of HRM (something this area of the field has been lacking). By viewing HRM as part of the strategic management process, it may be possible to better understand how and why firms manage their human resources the way they do.

However, apart from trying to demonstrate that HRM can be conceived as a control system, a vital element in future research is the development and articulation of theory explaining why and how these systems are related to other aspects of organization. The lack of significant findings in this area is a major disappointment of the present study. Future research directed at determining how HRM fits

into the scheme of organizational functioning is essential for using human resources to build the competitive success of firms.

APPENDICES

APPENDIX A:

EXECUTIVE QUESTIONNAIRE

DEPARTMENT OF MANAGEMENT

Graduate School of Business Administration
Michigan State University
East Lansing, Michigan 48824

SECTION 4: Listed below are a series of statements that possibly describe the way you select, train, evaluate and reward your subordinate managers. Please circle the number (1 = strongly disagree to 7 = strongly agree) indicating the extent to which you agree or disagree with each statement.

	STRONGLY DISAGREE						STRONGLY AGREE
	1	2	3	4	5	6	7
My managers assume responsibility for setting their performance goals.	1	2	3	4	5	6	7
Performance targets for my managers are "written in stone."	1	2	3	4	5	6	7
When I evaluate my subordinate managers, I place primary weight on the effectiveness of their behavior.	1	2	3	4	5	6	7
When I evaluate my team of managers, I place primary weight on their documented results and objective achievements.	1	2	3	4	5	6	7
To evaluate my managers, I contrast their past with their present performance records.	1	2	3	4	5	6	7
I use pre-established standards as the benchmark for evaluating my managers' performance.	1	2	3	4	5	6	7
I make relative comparisons across each of my managers in order to evaluate who is performing best.	1	2	3	4	5	6	7
Members in our firm receive frequent information about their performance.	1	2	3	4	5	6	7
A sizable amount of my subordinates' pay consists of performance-based rewards (bonuses, profit sharing, etc.).	1	2	3	4	5	6	7
I require that my managers have a great deal of closely related experience before they can be hired for their jobs.	1	2	3	4	5	6	7
My subordinate managers receive substantial training before they assume much responsibility on their new jobs.	1	2	3	4	5	6	7
My managers and I consult with one another in setting their performance goals.	1	2	3	4	5	6	7
My managers' performance objectives are designed to allow for flexibility and change.	1	2	3	4	5	6	7
My managers are held accountable for their actions, regardless of whether their performance results are good or bad.	1	2	3	4	5	6	7
I use numerical records of my managers' performance as the chief indicator of their effectiveness.	1	2	3	4	5	6	7
I give higher ratings to those managers who show performance improvement over time.	1	2	3	4	5	6	7
Those managers who do not reach their objectives receive lower performance ratings.	1	2	3	4	5	6	7
To assess the contribution of each manager, his or her performance is compared to some referent other(s).	1	2	3	4	5	6	7
Long lag periods are required in order to trace performance trends and give feedback to my managers.	1	2	3	4	5	6	7
Most of the differences in pay among my managers represent differences in their performance levels.	1	2	3	4	5	6	7
I have gone to great lengths to develop the best staffing procedures possible.	1	2	3	4	5	6	7
Even after my managers have been on the job for years, they still are involved in many skill development activities.	1	2	3	4	5	6	7
Performance goals for my managers are more likely to be imposed top-down rather than negotiated with them.	1	2	3	4	5	6	7
Performance objectives are established initially as a starting point, but are modified frequently.	1	2	3	4	5	6	7
I do not generally concern myself with the particular procedures and methods my managers use on the job.	1	2	3	4	5	6	7
Regardless of what my managers may be like personally, their performance is judged by the results they accomplish.	1	2	3	4	5	6	7
The prior accomplishments of my managers have very little affect on my appraisal of their present performances.	1	2	3	4	5	6	7
Regardless of their absolute accomplishments, I appraise my managers mostly on whether they reach their goals.	1	2	3	4	5	6	7
Evaluations of my managers are made independently of how well anybody else has performed.	1	2	3	4	5	6	7
I arrange frequent meetings with my managers to discuss performance problems and issues.	1	2	3	4	5	6	7
The rewards my managers receive are linked to their concrete results.	1	2	3	4	5	6	7
My subordinates must undergo a series of evaluations before they can be hired into their jobs.	1	2	3	4	5	6	7
My team of managers are given ample opportunity to broaden their range of talents.	1	2	3	4	5	6	7
It is infeasible to try to lock my managers into a fixed set of performance targets.	1	2	3	4	5	6	7
My team of managers are paid primarily on straight salary.	1	2	3	4	5	6	7
I take pride in the fact that I hire the very best people for the job.	1	2	3	4	5	6	7
I have a strong commitment to training and developing highly skilled managers.	1	2	3	4	5	6	7

SECTION 5: In the space below, would you please provide us with the names and addresses of three of your immediate subordinate managers. We would like to send them this questionnaire also in order to see how they manage their people as well. Their (confidential) responses, combined with yours, will give us a very good picture of the overall management practices in your firm. Again, thank you for your cooperation in this research. Your help is greatly appreciated.

Manager #1	Manager #2	Manager #3
Mr/Ms_____	Mr/Ms_____	Mr/Ms_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

SECTION 1: Firms position themselves in different ways, none of which is inherently "good" or "bad." Listed below are a number of statements that might potentially describe your firm. Please consider your company as a whole and circle the number (1 = strongly disagree to 7 = strongly agree) indicating the extent to which you agree or disagree with these statements.

	STRONGLY		STRONGLY
	DISAGREE	1 2 3 4 5 6 7	AGREE

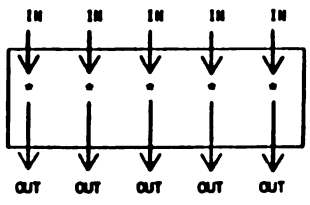
1 2 3 4 5 6 7 Our firm offers a narrow range of products.
1 2 3 4 5 6 7 Our firm establishes and maintains a stable posture in our product-market.
1 2 3 4 5 6 7 When our customers purchase from us, they tend to buy many different things.
1 2 3 4 5 6 7 Our firm is at the forefront of innovation and development.
1 2 3 4 5 6 7 The characteristics of our products differ a great deal from one another.
1 2 3 4 5 6 7 Our business procedures have changed several times over the last few years.
1 2 3 4 5 6 7 Our firm sells to a wide variety of customers.
1 2 3 4 5 6 7 The characteristics of our products and services are modified frequently.
1 2 3 4 5 6 7 The needs of our customers are very similar to one another.
1 2 3 4 5 6 7 The needs of our customers vary quite a bit from one year to the next.
1 2 3 4 5 6 7 Our firm offers many different services to customers.

SECTION 2: Listed below are a number of statements about the possible conditions you may face in managing your immediate team of subordinate managers. Please circle the number (1 to 7) indicating the degree to which you agree or disagree with each statement.

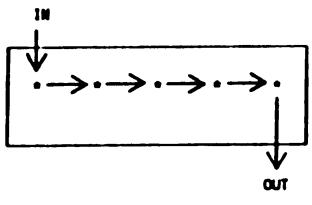
	STRONGLY		STRONGLY
	DISAGREE	1 2 3 4 5 6 7	AGREE

1 2 3 4 5 6 7 I find it difficult to monitor the behavior of my subordinate managers.
1 2 3 4 5 6 7 The relationship between the actions my subordinates take and the outcomes they achieve changes over time.
1 2 3 4 5 6 7 I have several sources of objective data available that indicate how well each of my subordinates is performing.
1 2 3 4 5 6 7 I can usually distinguish between effective and ineffective managers by watching their actions on the job.
1 2 3 4 5 6 7 My subordinates must often act in very different ways in order to achieve the same outcome.
1 2 3 4 5 6 7 My managers do not perform jobs for which there are quantifiable measures.
1 2 3 4 5 6 7 At the time they occur, I cannot usually observe most of the duties my subordinate managers perform.
1 2 3 4 5 6 7 Cause-effect relationships are stable in my subordinate managers' jobs.
1 2 3 4 5 6 7 Results measures (e.g., sales, output, profits) accurately depict how well my subordinates have performed.
1 2 3 4 5 6 7 I sacrifice detail of supervision for breadth/scope of managing.
1 2 3 4 5 6 7 It is difficult to predict in advance how successful my managers will be as a consequence of the actions they take.
1 2 3 4 5 6 7 I am not in a position to see exactly what actions my managers take to achieve the results they do.
1 2 3 4 5 6 7 It is infeasible to try to formulate a set of "tried and true" standardized procedures for my managers to follow.
1 2 3 4 5 6 7 I am unable to personally gauge the entire range of my managers' behavior.

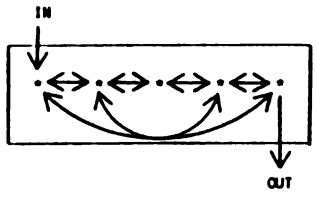
SECTION 3: Work can flow through an organization in several different ways. Three of these ways are depicted in the following illustrations. Place a check under the diagram which best depicts the overall flow of work through your firm.



A. _____ Work does not flow between units



B. _____ Work flows between units but in only one direction.



C. _____ Work flows between units in a reciprocal manner.

APPENDIX B

LIST OF PARTICIPATING FIRMS

AFA PROTECTIVE SYSTEMS, INC.
ACE HARDWARE CORP
AFTER SIX, INC.
ALLNET COMMUNICATIONS SERVICES
ALOHA, INC.
AMERICAN STANDARD HOMES CORP.
AMWAY CORP.
APPLIED COMMUNICATIONS, INC.
APPLIED MAGNETICS CORP.
ASTRO-MED, INC.
ATLANTIC CITY ELECTRIC CO.
ATLAS HOTELS, INC.
THE BANKER'S NOTE, INC.
BARNETT MILLWORKS, INC.
BARONDATA SYSTEMS
BEARINGS, INC.
BEEHIVE INTERNATIONAL
BESSER COMPANY
BLACK HIILLS CORP.
BOSTON EDISON CO.
BROCK HOTEL CORP.
BRODART CO.
JOHN O. BUTLER CO.
CALLON PETROLEUM CO.
CASCADE CORP.
CERTRON CORP.
COMMODORE CORP.
COMSHARE, INC.
CONE MILLS CORP.
CONSOLIDATED FIBERS, INC.
CONVERSE, INC.
COOPER TIRE & RUBBER CO.
COUNTRY LIFE INSURANCE CO.
THE LAWSON CO.
DAYS INNS OF AMERICA, INC.
DELMARVA POWER AND LIGHT
DOE SPUN, INC.
DR. PEPPER COMPANY
EKCO HOUSEWARES, INC.
EL PASO ELECTRIC
ELECTROSPACE SYSTEMS, INC.
EMULEX CORPORATION
EXOLON-ESK CO.
FARM FRESH, INC.

APPENDIX B (continued)

FIBRONICS INTERNATIONAL INC.
FOODORAMA SUPERMARKETS
FOTOMAT CORPORATION
I. MAGNIN & CO.
OLD PHOENIX NATIONAL BANK
GANTOS
GELMAN SCIENCES, INC.
GETTY PETROLEUM CORP.
GLEN-GERY CORP.
THE GUARDIAN LIFE INSURANCE CO. OF AMERICA
HAVERTY FURNITURE COMPANIES, INC.
THE HIGBEE CO.
HOLLY SUGAR CORP.
D. H. HOLMES CO. LTD.
HOUSE OF FABRICS, INC.
J. B. HUNT TRANSPORT SERVICES, INC.
INTERMEC CORPORATION
INTERNATIONAL GAME TECHNOLOGY
JACKSON NATIONAL LIFE INSURANCE CO.
JACOBSON STORES, INC.
KANSAS POWER & LIGHT CO.
KENTUCKY UTILITIES COMPANY
KEVEX CORP.
KING KULLEN GROCERY CO., INC.
KNAP SHOES, INC.
KNOGO CORP.
KOSS CORP.
KROY, INC.
LA QUINTA MOTOR INNS
LAZERUS
ALBERT LECHTER, INC.
LEE DATA CORP.
LONGYEAR CO.
L. LURIA & SONS, INC.
MPO VIDOETRONICS, INC.
MARKET FACTS, INC.
MARS, INC.
THE MAY CO.
MERCURY SAVINGS & LOAN ASSOC.
MERRIMAC INDUSTRIES, INC.
MIDWAY AIRLINES, INC.
MOBILE GAS SERVICE CORP.
MTS SYSTEMS CORP.
THE L. E. MYERS CO. GROUP
NATCO INDUSTRIES, INC.
NAVISTAR INTERNATIONAL CORP.
NEBRASKA PUBLIC POWER DISTRIBUTION

APPENDIX B (continued)

NEVADA POWER CO.
NORD RESOURCES CORP.
NORDSTROM, INC.
NORTHERN AIR FREIGHT, INC.
NORTHWEST PIPELINE CORP.
NORTHWESTERN STEEL & WIRE CO.
OLIVETTI USA
OZITE CORP.
AMIDA, INC.
PARADYNE CORP.
PIC N'PAY SUPERMARKETS, INC.
PIC'N PAY STORES, INC.
PUBLIC SERVICE CO. OF INDIANA, INC.
PUEBLO INTERNATIONAL, INC.
QUANTUM CORP.
THE RECORD BAR, INC.
RYANS'S FAMILY STEAK HOUSES, INC.
SANTA MONICA BANK
SECURITY PLASTICS, INC.
SELAS CORP. OF AMERICA
SEMTECH CORP.
SENSORMATIC ELECTRONICS CORP.
SERVICO, INC.
SNYDER GENERAL CORP.
SOFTWARD AG SYSTEMS, INC.
SORG PRINTING CO.
SOUTHERN CALIFORNIA WATER CO.
SOUTHERN HOSPITALITY CORP.
SOUTHERN INDIANA GAS & ELECTRIC CO.
SPANGLER CANDY CO.
SPENCER COMPANIES, INC.
STEWART SANDWICHES, INC.
THE STROH BREWERY CO.
SUITT CONSTRUCTION CO.
SUNKIST GROWERS, INC.
TICKETRON, INC.
TIMEX CORP.
VAUGHAN PRODUCTS, INC.
VETERINARY COMPANIES OF AMERICA
VICTAULIC CO. OF AMERICA
VIVITAR CORP.
WESTERN STATES LIFE INSURANCE
WHITE CASTLE SYSTEM, INC.
WHITING CORP.

APPENDIX C:

PILOT STUDY

Prior to conducting the main portion of the study, each of the measures was pilot tested on an independent sample of managers. The purposes of this pilot study were: (1) to determine the internal consistency of each scale, (2) to examine the intercorrelation among hypothetically independent constructs (e.g., unobservable versus unpredictable means-ends), and (3) to refine the clarity of language used in constructing each item.

It should be noted that no attempt was made to acquire multiple responses from individuals within the same firm. Consequently, there was no way in this pilot study to determine whether executives within firms concur about strategic posture, administrative uncertainty, or HRM controls.

C.1 Sample

A sample was drawn from 110 middle and upper level managers who were enrolled in the Michigan State University Executive MBA program. Since most of these participants held positions of recognizable authority in their firms (e.g., vice president, divisional manager, functional director), it was decided that they could adequately assess the strategic posture and practices in their firms.

Because there has been some argument in the literature that managers below the chief executive level may be unaware or misinformed about the firm's strategy (Hambrick, 1980), an additional precaution

was taken to ensure that the data collected was representative (i.e., valid). Each manager was informed that if he or she did not feel capable of accurately responding to the questionnaire, he or she should decline participation in the research.

Of the original 110 executives asked to participate, 67 completed the study (61 percent response rate). These executives represented firms in a wide range of industries (e.g., retail, manufacturing, finance, public education, utilities). The average age of these respondents was 43. Thirty-nine were male, 26 were female (the gender of two respondents was not reported). None of these executives or companies sampled in the pilot study was utilized in the main portion of the research.

C.2 Procedure

The executives were provided only a general idea of the intent and scope of the research, and were guaranteed complete anonymity during the entire piloting process. They were each given a copy of the pilot questionnaire and asked to respond in two ways.

First, they were to indicate on a seven point Likert scale how accurately each statement represented the overall strategic posture, administrative context and management practices in their company. They were not to respond just in terms of their own personal situation but to try to characterize the company as a whole. In cases where individuals worked in firms with multiple operating divisions or strategic business units (e.g., General Motors), each participant was

instructed to respond only in terms of their individual business unit.

Second, participants were further instructed to write comments in the margins next to items that were unclear, overly sensitive, misleading, or otherwise confusing. In addition, one of the purposes for this procedure was determining whether executives felt they could characterize the overall practices utilized in the entire unit (versus just their own).

C.3 Measures

The pilot questionnaire is shown in Figure C-1. Figure C-2, C-3, and C-4 shows the items categorized under the construct they were intended to measure (i.e., strategic posture, administrative uncertainty, HRM control).

Strategic posture. As noted in Chapter 2, the model of strategic posture (i.e., domain defense, domain offense) is comprised of two underlying components-- domain breadth and change. Since researchers (e.g., Galbraith and Schendel, 1983; Miles, 1982; Miles and Snow, 1978) have debated whether breadth and change are completely independent dimensions of strategic posture or whether they can/should be combined into a unitary dimension, this issue was tested in the pilot study. To test this issue, the measure of strategic posture was subdivided in the pilot study according two its two underlying components:

(1) breadth posture - five Likert scale items measuring the number and variety of products, services, customers, and markets in which a firm engages.

(2) change posture - five Likert scale items that measured the

degree to which a firm's products, services, customers, and markets change over time.

In addition to testing the internal consistency of these two subscales, their intercorrelation was also examined to determine whether it would be more appropriate to form a composite variable or two treat the two components independently.

Administrative uncertainty. The measure of administrative uncertainty was also subdivided into two underlying components--ability to observe cause-effect linkages and ability to predict these linkages in advance.

(1) unobservable mean-ends - six Likert scale items measuring the extent to which member activities can be observed and evaluated.

(2) unpredictable means-ends - five Likert scale items measuring the extent to which the relationship between activities and outcomes are stable (i.e., reliable) over time.

As with the measure of strategic posture, both the internal consistency and the intercorrelation between the two components of uncertainty were examined to determine whether to form a composite variable or two treat the two subscales independently.

HRM Control. Since previous researchers have treated each of the separate components of HRM control systems as independent practices, the measures were subdivided into their underlying components:

(1) Consultation in decision-making - three Likert scale items measuring the degree to which superiors and subordinates jointly set performance standards.

(2) Flexibility of performance standards - four Likert scale items measuring the degree to which performance standards are modified and/or loosely interpreted.

(3) Performance-reward linkage - four items that measure how explicitly monetary rewards are tied to performance.

(4) Behavioral performance measures - three items that assess the extent to which performance is measured using behavior as a criterion.

(5) Results performance measures - three items that assess the extent to which performance is measured using results as a criterion.

(6) Historical trends - three items that measure the extent to which performance evaluation is based upon whether individuals show improvement over time.

(7) Use of preset targets - three items that measure the extent to which performance evaluations are based upon whether individuals achieve their planned targets.

(8) Referent comparisons - three items that measure the degree to which performance evaluations are assessed by comparing individuals with one another.

(9) Frequency of feedback - three items that measure how long it takes to get information about subordinate performance in order to give them feedback.

In addition to testing the internal consistency of these nine subscales, their intercorrelations were also examined to determine whether it would be more appropriate to form composite indices of behavior control and output control or two treat the nine components as independent HRM practices.

MICHIGAN STATE UNIVERSITY

GRADUATE SCHOOL OF BUSINESS ADMINISTRATION
DEPARTMENT OF MANAGEMENT (517) 353-5415

EAST LANSING MICHIGAN 48824-1121

November 11, 1986

Dear Participant:

The questionnaire you are about to complete is part of a research project being conducted at the Department of Management, Michigan State University. All of the information that you provide to us is entirely confidential, and each participant will be ensured of complete anonymity.

The focus of this research is on the context of human resources management (HRM) practices in firms. Specifically, we are interested in how HRM practices vary across different companies and different managerial contexts. While we know a good deal about the potential ways that firms might manage their people, we have not determined why firms choose the particular HRM practices they do. There are vast differences across firms, and some practices work for some firms but not for others. Consequently, it is difficult to predict which HRM practices might be best suited for any one particular company.

Two points of clarification are necessary:

1. If your corporation is composed of many different companies (i.e., diversified, conglomerate), please respond only in terms of your own immediate company (not the entire corporation).

2. The questionnaire is designed to extend beyond your own personal situation to also describe the management context of your fellow managers as well. Please try to characterize the overall situation that represents your company as a whole.

We very much appreciate your participation in filling out this survey. Our findings will be made available to you upon the completion of the analysis.

Sincerely,

Scott A. Snell
Department of Management
Michigan State University
242 Eppley Center
East Lansing, MI 48824
(517) 353-5415

Figure C-1

SECTION 1: Companies compete in many different ways, none of which is inherently "good" or "bad." Listed below are a number of statements about how your firm might compete. Please consider your business as a whole relative to your competitors and circle the number (1 = strongly disagree to 7 = strongly agree) indicating the extent to which you agree or disagree with these statements.

STRONGLY DISAGREE 1 2 3 4 5 6 7 STRONGLY AGREE

1 2 3 4 5 6 7 Our firm tries to maintain a secure postion in a stable product-service market.

1 2 3 4 5 6 7 When our customers purchase from us, they tend to buy many different products/services.

1 2 3 4 5 6 7 Our firm is often at the forefront of developments in the industry, actually creating change with which our competitors must cope.

1 2 3 4 5 6 7 Our firm sells to many kinds of customers with very different needs.

1 2 3 4 5 6 7 Our business procedures have changed serveral times over the last few years.

1 2 3 4 5 6 7 Our firm competes by offering customers a wide range/full line of products and services.

1 2 3 4 5 6 7 The mix of our products and services is modified frequently.

1 2 3 4 5 6 7 The kinds of products and services we offer differ widely from one another.

1 2 3 4 5 6 7 The types of customers to whom we sell varies a great deal from one year to the next.

1 2 3 4 5 6 7 Relative to the competition, our firm emphasizes many services after the sale.

SECTION 2: Listed below are a number of statements that possibly describe the management situation in your firm. Please circle the number (1 = strongly disagree to 7 = strongly agree) indicating the degree to which you agree or disagree with each statement.

STRONGLY DISAGREE 1 2 3 4 5 6 7 STRONGLY AGREE

1 2 3 4 5 6 7 Managers in our firm have a difficult time monitoring the behavior of their subordinates.

1 2 3 4 5 6 7 There is an unpredictable relationship between the actions subordinates take and the actual results they eventually achieve.

1 2 3 4 5 6 7 Managers often do not have reliable information about what subordinates have done to achieve their results.

1 2 3 4 5 6 7 Managers can usually spell out a "tried and true" set of predetermined performance procedures for their subordinates to follow.

1 2 3 4 5 6 7 Managers can monitor the subtle details of their subordinates' actions.

1 2 3 4 5 6 7 Managers can predict how successful subordinates will be by watching their job behaviors.

1 2 3 4 5 6 7 Managers sacrifice detail of surveillance for breadth or scope of surveillance.

1 2 3 4 5 6 7 There is no telling what outcomes will result as a consequence of subordinates' actions.

1 2 3 4 5 6 7 It is impossible to determine what behaviors account for the results subordinates achieve.

1 2 3 4 5 6 7 It is impossible for managers to program in advance what their people must do to succeed.

1 2 3 4 5 6 7 Managers are incapable of personally gauging the entire range of subordinate activities.

Figure C-1 (con't.)

SECTION 3: Listed below are a series of statements that possibly describe the way managers in your firm select, train, evaluate and reward their subordinates. Please circle the number (1 = strongly disagree to 7 = strongly agree) indicating the extent to which you agree or disagree with each statement.

STRONGLY DISAGREE 1 2 3 4 5 6 7 STRONGLY AGREE

1 2 3 4 5 6 7 Our subordinates assume responsibility for setting their own performance goals.

1 2 3 4 5 6 7 Performance objectives for our subordinates do not change much from year to year.

1 2 3 4 5 6 7 When managers in our firm evaluate subordinates for raises, promotions, etc., decisions are mostly based on assessments of the candidate's behavior on the job.

1 2 3 4 5 6 7 When managers in our firm evaluate employees for raises, promotions, etc. weight is placed primarily on documented results and objective achievements.

1 2 3 4 5 6 7 To evaluate member performance, managers usually contrast present with past performances.

1 2 3 4 5 6 7 Managers appraise their subordinates by comparing present achievements to explicit targets.

1 2 3 4 5 6 7 Our subordinates are compared to each another in order to determine who is performing best.

1 2 3 4 5 6 7 Members in our firm receive frequent information about their performance.

1 2 3 4 5 6 7 Our subordinates receive performance incentive payments (commissions, bonuses, etc.).

1 2 3 4 5 6 7 Our immediate subordinates must have a good deal of related work experience to be hired for their jobs.

1 2 3 4 5 6 7 Subordinates recieve a substantial amount of training before they assume much responsibility on the job.

1 2 3 4 5 6 7 Managers seldom involve subordinates when setting subordinate performance targets.

1 2 3 4 5 6 7 Performance objectives only serve as flexible guidelines for the future.

1 2 3 4 5 6 7 Subordinates are held explicitly accountable for the behaviors they exhibit on the job, irrespective of the results they achieve.

1 2 3 4 5 6 7 Managers use output records as the chief indicator of their subordinates' performance.

1 2 3 4 5 6 7 In order to achieve high performance evaluations in our firm, people must demonstrate improvement over time.

1 2 3 4 5 6 7 If subordinates do not reach their planned performance objectives, their evaluations are automatically lowered.

1 2 3 4 5 6 7 In order to assess whether an individual has been performing well, his or her achievements are compared to some other referent person or persons.

1 2 3 4 5 6 7 There are long lag periods required to trace performance trends and give feedback to subordinates.

1 2 3 4 5 6 7 Most of the differences in pay in our company represent differences in performance levels.

1 2 3 4 5 6 7 Our firm goes to great lengths to develop the best staffing procedures possible.

1 2 3 4 5 6 7 Even after subordinates have been on the job for years, they still attend periodic training and development programs.

Figure C-1 (con't.)

STRONGLY DISAGREE 1 2 3 4 5 6 7 STRONGLY AGREE

1 2 3 4 5 6 7 Performance goals set for subordinates are more likely to be imposed from company objectives than determined according to personal circumstances.

1 2 3 4 5 6 7 Performance objectives are established initially as a starting point, but are frequently modified as time goes by.

1 2 3 4 5 6 7 Managers mostly evaluate their subordinates on the basis of personal observation.

1 2 3 4 5 6 7 Regardless of what an individual may be like personally, their effectiveness is judged by the results they accomplish.

1 2 3 4 5 6 7 People who show steady improvement over time recieve the highest performance ratings.

1 2 3 4 5 6 7 Plans are set up each rating period and subordinate performance is judged in reference to that plan.

1 2 3 4 5 6 7 Managerial evaluations of subordinates are made independently from how others in the firm have performed.

1 2 3 4 5 6 7 Managers frequently arrange informal meetings with their subordinates to discuss performance problems and issues.

1 2 3 4 5 6 7 Subordinates know that in order to gain financial rewards they must have a number of accomplishments to show for their efforts.

1 2 3 4 5 6 7 Subordinates must pass a series of selection tests before they are hired into our firm.

1 2 3 4 5 6 7 Subordinates are given ample opportunity to broaden their range of skills and talents.

1 2 3 4 5 6 7 The problems and opportunities facing subordinates change too frequently to lock them into a concrete set of performance objectives.

1 2 3 4 5 6 7 There are very few complaints in our firm about personal biases effecting performance evaluations.

1 2 3 4 5 6 7 In this firm, a subordinate is only as good as his or her latest performance evaluation.

1 2 3 4 5 6 7 Subordinates are rewarded for their dedication and skill rather than performance results.

1 2 3 4 5 6 7 Our firm takes pride in the fact that we hire the best applicants on the job market.

1 2 3 4 5 6 7 Our firm demonstrates a strong commitment to training and developing skilled employees.

Figure C-1 (con't.)

Figure C-2
Measure of strategic posture used in the pilot study

Breadth

When our customers purchase from us, they tend to buy many different products/services.

Our firm sells to many kinds of customers with very different needs.

Our firm competes by offering customers a wide range/full line of products and services.

The kinds of products and services we offer differ widely from one another.

Relative to the competition, our firm emphasizes many services after the sale.

Change

Our firm tries to maintain a secure position in a stable product-service market.

Our firm is often at the forefront of developments in the industry, actually creating change with which our competitors must cope.

Our business procedures have changed several times over the last few years.

The mix of our products and services is modified frequently.

The types of customers to whom we sell varies a great deal from one year to the next.

Figure C-3
Measure of administrative uncertainty used in pilot study

Unobservable Means-ends Linkage

Managers in our firm have a difficult time monitoring the behavior of their subordinates.

Managers often do not have reliable information about what subordinates have done to achieve their results.

Managers can monitor the subtle details of their subordinates' actions.

Mangers sacrifice detail of surveillance for breadth or scope of surveillance.

It is impossible to determine what behaviors account for the results subordinates achieve.

Managers are incapable of personally gauging the entire range of subordinate activities.

Unpredictable Means-ends Linkage

There is an unpredictable relationship between the actions subordinates take and the actual results they eventually achieve.

Managers can usually spell out a "tried and true" set of predetermined performance procedures for their subordinates to follow.

Managers can predict how successful subordinates will be by watching their job behaviors.

There is no telling what outcomes will result as a consequence of subordinate actions.

It is impossible for managers to program in advance what their people should do to succeed.

Figure C-4
Measures of HRM control used in pilot study

Consultation in Setting Performance Standards

Our subordinates assume responsibility for setting their own performance goals.

Managers seldom involve subordinates when setting subordinate performance targets.

Performance goals are set for subordinates are more likely to be imposed from company objectives than determined according to personal circumstances.

Flexibility of Performance Standards

Performance objectives for our subordinates do not change much from year to year.

Performance objectives only serve as flexible guidelines for the future.

Performance objectives are established initially as a starting point, but are frequently modified as time goes by.

The problems and opportunities facing subordinates change too frequently to lock them into a concrete set of performance objectives.

Performance-reward Linkage

Our subordinates receive performance incentive payments (commissions, bonuses, etc.).

Most of the differences in pay in our company represent differences in performance levels.

Subordinates know that in order to gain financial rewards they must have a number of accomplishments to show for their efforts.

Figure C-4 (cont.)
Measures of HRM control used in pilot study

Behavioral Performance Measures

When managers in our firm evaluate subordinates for raises, promotions, etc., decisions are mostly based on assessments of the candidates' behavior.

Subordinates are held explicitly accountable for the behaviors they exhibit on the job, irrespective of the results they achieve.

Managers mostly evaluate their subordinates on the basis of personal observation.

Results Performance Measures

When managers in our firm evaluate subordinates for raises, promotions, etc., weight is placed primarily on documented results and objective achievements.

Managers use output records as the chief indicator of their subordinates' performance.

Regardless of what an individual may be like personally, their effectiveness is judged by the results they accomplish.

Historical Trends in Appraisal Decisions

To evaluate member performance, managers usually contrast present with past performances.

In order to achieve high performance evaluations in our firm, people must demonstrate improvement over time.

People who show steady improvement over time receive the highest performance ratings.

In this firm, a subordinate is only as good as his or her latest performance evaluation.

Figure C-4 (cont.)
Measures of HRM control used in pilot study

Referent Comparisons in Appraisal Decisions

Our subordinates are compared to each other in order to determine who is performing best.

In order to assess whether an individual has been performing well, his or her achievements are compared to some other referent person or persons.

Managerial evaluations of subordinates are made independently from how others in the firm have performed.

Performance Targets in Appraisal Decisions

Managers appraise their subordinates by comparing present achievements to explicit targets.

If subordinates do not reach their planned performance objectives, their evaluations are automatically lowered.

Frequency of Feedback

Members in our firm receive frequent information about their performance.

There are long lag periods required to trace performance trends and give feedback to subordinates.

Managers frequently arrange informal meetings with their subordinates to discuss performance problems and issues.

C.4 Results and Discussion

The pilot study means, standard deviations, alpha coefficients and intercorrelations are presented in Tables C-1 and C-2. The means of all of the scales were around 4.0 (on a 7 point scale). This suggests that there were no serious problems due to ceiling or floor effects which might restrict the range or skew the distribution of responses. In addition, the standard deviations ranged from about 1.0 to 1.5 for most all the scale distributions. This again suggests that range restriction did not pose a serious threat in the pilot study.

Strategic posture. Cronbach's alpha estimate of internal consistency reliability for the two subscales of strategy were as follows: breadth (alpha = .78), and change (alpha = .66). These alpha coefficients are both an acceptable level for exploratory research (Nunnally, 1978). As anticipated, the two subscales of strategic posture (breadth and change) were positively correlated ($r = .40$, $p<.01$; 16 percent shared variance). When corrected for attenuation, this correlation increased to .55 (30 percent shared variance). These results indicated that while the two underlying components of strategic posture were not completely redundant, their relationship indicated that the two should be operationalized as a unidimensional construct for the main portion of the study.

Administrative uncertainty. The two subscales of administrative uncertainty yielded reliability coefficients as follows: unobservable means-ends linkage (alpha = .80), and unpredictable means-ends linkage (alpha = their intercorrelation ($r = .58$, $p < .01$, 33 percent shared variance) indicated that the two underlying components of

administrative uncertainty are not independent. After correcting for attenuation, their relationship increased to .71 (50 percent shared variance). These findings indicate that administrative uncertainty should be operationalized as a unidimensional construct for the main portion of the study.

HRM control systems. The reliability estimates for the nine underlying components of HRM control were as follows: consultation in setting performance standards (alpha = .60), flexibility of performance standards (alpha = .45), behavioral measures (alpha = .56), results measures (alpha = (alpha = .39), referent comparisons in appraisal (alpha = .81), frequency of feedback (alpha = .89).

In most cases, the apparent problem in achieving internal consistency of these HRM measures is traceable to the number of items used comprising each subscale.

In addition, several of the measures of HRM control were highly intercorrelated. This occurrence was expected in most instances (as underlying components of either behavior control or output control systems). For example, results appraisals and performance-reward linkage were positively correlated (r = .65), as were performance targets and performance-reward linkage (r = .52). Each of these are underlying components of output control. Other relationships were more surprising. For example, consultation (output control) correlated .57 with feedback (behavior control). Behavioral measures (behavior control) correlated .69 with results measures (output control). Feedback (behavior control) correlated .60 with rewards (output

control).

To avoid unwarranted intercorrleation among separate measures, and in an attempt to ensure appropriate internal consistency of measurement, all of the underlying components of behavior control were combined into a composite measure. Likewise, all of the underlying components of output control were combined into a composite measure. Consequently, for the main portion of the study HRM control was operationalized using two dimensions: behavior control and output control.

In addition, after examining item-total correlations for each scale, attempts were made to eliminate unwarranted convergence among independent measures by rewording items to represent only one construct domain. For example, one item measuring behavior measures originally read: "Subordinates are held explicitly accountable for the behaviors they exhibit on the job, irrespective of the results they achieve (emphasis added)." It was decided that this wording might have caused an inadvertent correlation between the behavior and output control.

Consequently, the items were rephrased to better distinguish one type of control versus another. Other items were reworded based upon this same type of analysis.

Beyond statistical analysis of the measurement scales, each item was also content analyzed. Using the participants' comments written in the margins of their questionnaires, extra care was taken to paraphrase academic language in a manner more interpretable by practitioners. For example, several participants found the word "surveillance" to be objectionable. They suggested words such as "supervision" and

"management" which were substituted into the final instrument. In addition, two participants found the whole section on administrative uncertainty to be (in their words) "profoundly autocratic" and "objectionable" and declined to finish the questionnaire. Consequently, the language used in that section was softened as much as possible.

In addition, based upon the comments of the participants and discussions with members of the research committee, it was decided that items pertaining to HRM control and administrative uncertainty should be worded at the individual level for the main portion of the study. The reasoning behind this change was that executives would have an easier time providing an account of their own situation, but might not feel capable of describing the administrative context and HRM practices of the entire firm.

The final scales utilized in the main portion of the study are shown in Figures 9 - 11 of Chapter Three (i.e., Methods). By comparing Table C-1, C-2, C-3, and C-4 with Figures 9 - 11 it is possible to observe more clearly how the wording and structure of the measurement scales have been modified as a result of conducting the pilot study.

It must be recognized that during the entire process of questionnaire development and modification, the utmost care was taken to hold the overall length of the questionnaire to its original three pages. This point cannot be overstated. At the time of the pilot study, it was argued that the greatest potential threat to this research would be a poor return rate from upper level executives. The

participation of executives from at least 84 firms was required to achieve sufficient statistical power, and it was feared that the task of obtaining such a sample size would be extremely problematic. Consequently, highest priority was placed on keeping the instrument sufficiently brief to encourage executive participation.

Table C-1
Pilot study: means, standard deviations, and alphas (n=68)

	(mean)	(sd)	(alpha)
STRATEGIC POSTURE			
1. Breadth	4.3	1.3	.78
2. Change	3.8	1.0	.66
ADMIN. UNCERTAINTY			
3. Unobservable	3.9	1.1	.80
4. Unpredictable	3.3	1.1	.83
HRM CONTROL			
5. Consultation	4.1	1.2	.60
6. Flexibility	4.2	1.0	.45
7. Behavior	3.9	.8	.56
8. Result	3.9	1.1	.76
9. History	4.4	1.0	.47
10. Target	4.0	.9	.39
11. Referent	3.6	1.4	.81
12. Feedback	4.2	1.5	.89
13. Rewards	4.4	1.3	.67

Table C-2:
Pilot study: Intercorrelations among variables (n=68)

	1	2	3	4	5	6	7	8	9	10	11	12
STRATEGY												
1. Brdth												
2. Chng	.40*											
UNCERTAINTY												
3. Obsrv	.01	.30*										
4. Prdct	.10	.11	.58**									
HRM CONTROL												
5. Cnslt	.18*	.21*	-.10	.17								
6. Flx	.08	.25*	.10	.05	.44**							
7. Bhv	.25*	-.13	-.37**	-.32**	.21*	.04						
8. Rslt	.48**	.15	-.26**	-.24**	.44**	.32**	.69**					
9. Hstr	.12	-.16	-.18*	-.31**	.01	-.09	.11	-.04				
10. Trgt	.42**	.27*	.01	.03	.28	.25*	.13	.38	.07			
11. Rfrt	.01	.25*	.53**	.35**	-.12	.05	-.38**	-.30	-.07	-.27		
12. Fb	.39**	.18*	-.49**	-.42**	.57	.47**	.47**	.63	.10	.34**	-.35**	
13. Rwrd	.36**	.16	.31**	.32**	.46**	.40**	.29**	.65**	.16	.52**	-.35**	.60**

* $p < .05$
** $p < .01$

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